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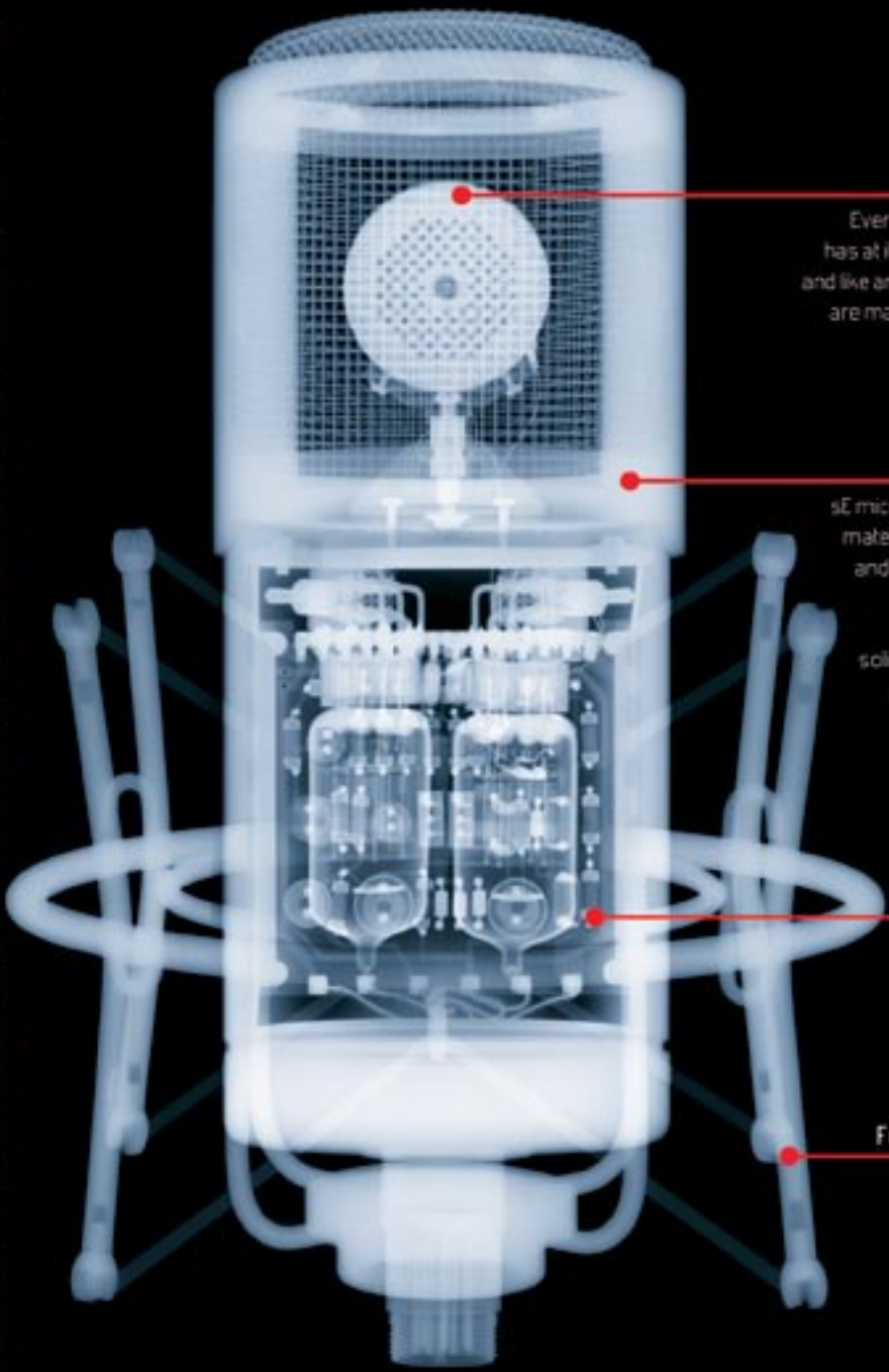

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We've probably all had enough of the financial industries and their firm grasp on everybody else's sensitive parts, but they do serve one useful purpose as a control example for everybody else – especially those involved in creative endeavour. You see, the point of the financial profession is to work with money and make money – and the purest of the financial breeds such as bankers, accountants, and so on don't use creation as a source of that money – they use other money as an end in itself. There is 'creative accounting', of course, but I don't think that's legal.

If you widen the definition of 'creative' past our industry's core tasks you could, for example, say that a business man uses creativity in the search for imaginative new avenues of wealth. This is tempered somewhat by the fact no one else gets to share in the creation itself – even though the employees might benefit indirectly.

Gambling is an interesting case – people spending money to try and make money, while the people actually making the money... make money. However, there is creativity in the games that camouflage the odds, so one could argue that in many cases the money is less important than the entertaining mechanism of gambling. A new set of Bingo rules is the gambling world's equivalent of a new album.

Think in terms of ratios now – specifically the ratio of opportunity for creative opportunity and thought and dominance of a creative product, versus the purely functional, process driven, and financial aspects of your professional life. Pretend you can only fill your soul with those two ingredients.

If you're 100 percent creative, then you're 16 years old, it's the summer holidays, and mum and dad are taking care of all the bills. If you're at 100 percent functional, then you're something like an accountant or banker who has no interest in any sort of financial pioneering and hates maths.

I like the idea that we create in order to earn – that the products of the audio industry stem from a balance of inspiration, technology, process, knowledge, history, demand, and circumstantial (often financial) necessity. I love the fact that creativity can be of value.

Imagine an accountant standing up in a quiet office and playing everyone a single excellent sound that he has spent the day creating (rather than counting stuff). That's the moment he became an ex-accountant.

If he was a Sound Designer, he'd be a hero.

Paul Mac, *Editor*

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www.audiomedia.com

AUDIO MEDIA (Europe), 1st Floor, 1 Cabot House,
Compass Point Business Park, St Ives, Cambs, PE27 5JL.
Telephone: +44 (0)1480 461555 – Facsimile: +44 (0)1480 461550

General E-mail: mail@audiomedia.com – Press Release E-mail: pr@audiomedia.com

Managing Director/Circulation
Angela Brown
a.brown@audiomedia.com

Group Publisher Europe
Raffaela Calabrese
r.calabrese@broadcast.it

Editor In Chief
Paul Mac
p.mac@audiomedia.com

News/AMSR Editor
Jo Fletcher-Cross
jfcross@audiomedia.com

Production Editor
Lanna Marshall
l.marshall@audiomedia.com

Design & Production Manager
John-Paul Shirreffs
jp.shirreffs@audiomedia.com

European Sales Manager
Graham Kirk
g.kirk@audiomedia.com

Regional Sales Manager
Bob Kennedy
bkennedy@imaspub.com
+44 (0)1279 861264

US Sales Manager
Dave Carson
dcarson@nbmedia.com
+1 615 776 1359

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*Within Broadcast & Production

NEW USER

The Magic Shop in New York has installed a Rupert Neve Designs 5088 discrete analogue mixing console in its newly reconfigured Blue Room. "The idea is to offer a low-cost alternative for my clients who are forced sometimes to mix in the box," explained Studio Owner Steve Rosenthal. "It's a nice collection of EQs, mic pres, and compressors for people to try out."
www.rupertneve.com

FACILITY UPGRADE

Mastering Engineer Michael Romanowski, in partnership with Producer Matt Boudreau, has taken over the lease and revamped the mastering room at 1340 Mission in San Francisco. The room has a new desk and outboard gear, and a unique ATR 102, one-inch, two-track tape machine with electronics by EAR's Tim de Paravicini. The complex includes Broken Radio Studios, run by Boudreau, a 1960s Bill Putnam-designed studio that houses the largest live room in the city.
www.1340mission.com

NEW USER

Mark Knopfler's British Grove Studios has purchased three more DAV Electronics units from KMR Audio. The studio has now got two BG5 channel strips and a BG2 four-way mic-pre to complement the range of DAV units already in use at the studio. DAV Owner, Mick Hinton said: "It is an honour to have my gear used at such a prestigious studio as British Grove."
www.kmraudio.com

NEW FACILITY

Angelic Sounds From Miloco

Miloco Studios is representing a new residential studio, in partnership with producer and former Jamiroquai keyboardist and songwriter Toby Smith. Angelic Studios is hidden away in the Northamptonshire countryside, near Banbury, and is based in two refurbished farm buildings. The studio is built around a Sam Toyashima control room, which features an SSL SL8072 G+ console with Total Recall and Ultimation. Monitors include ATC SCM200s, Barefoot Micromain 27s, and Yamaha NS10Ms, and the outboard rack offers vintage Neve mic-pres – four 1084s, six 1100s, and eight 33114s. Recording is done on Pro Tools HD3 with three 192 interfaces and two Apogee convertors, which provide 48 inputs and 56 outputs. An extensive collection of plug-ins is available.

The facility offers two recording rooms, the first with a high gabled roof, oak floor, and three tall stone walls, equipped with a drum kit and a white Yamaha g3 grand piano. The second room has an extensive collection of guitars, amps, and pedals, and a Yamaha upright piano, with an isolation booth opposite the room. The studio's microphone selection includes AKG, Coles, Neumann, and Royer, and there is also a large collection of keyboards and synths. Four bedrooms can accommodate six to eight people in a separate barn.

Miloco
+44 (0) 207 332 0008
www.miloco.co.uk

NEW PRODUCT

New Reverberations At Lexicon

Lexicon has begun shipping the new PCM92 Stereo Reverb/Effects Processor. Designed as a single rack space processor, the PCM92 offers 28 mono and stereo reverbs, delays and modulation effects, flexible routing configurations, and a library of over 1200 factory presets. The unit includes the popular Hall, Concert Hall, and Random Hall reverb algorithms, and has two channels of XLR AES/EBU digital I/O, MIDI, Word Clock, and Ethernet. It features 24-bit A/D-D/A conversion and 44.1 to 96kHz sample rates.

The PCM92 can be configured and fully controlled remotely through Harman HiQnet System Architect, and presets can be changed and parameters adjusted during live performances using the foot switch and foot controller inputs.

Lexicon Marketing Director Randy Garrett enthused: "The PCM92 offers our legendary Lexicon reverbs along with a host of new capabilities that will enhance their ability to produce the most exciting and highest quality sound possible."
www.lexicon.com

NEW PRODUCT

Primacoustic has launched the VoxGuard, a high performance ambient noise attenuator designed to mount on a microphone stand and surround a recording microphone to help control the sound from entering the microphone by minimising the reflections in the room. The lightweight design is made from an AMBS outer surround shell that is attached to a mic stand using the mic clip. The voice range is absorbed by a high-density open cell acoustic foam liner.

www.primacoustic.com

NEW PRODUCT

TC Electronics has unveiled the Impact Twin, an audio interface with two Impact III mic pres, designed to maximise the signal recorded into a DAW. Each one has three stages: mic amp, HD conversion, and a set of recording channel tools. The conversion rates can be selected from 44.1kHz to 192kHz, and the channel tools include an onboard EQ, compressor, and de-esser. The unit also has an inbuilt integrity check, direct monitor reverb, and includes an adaptor for FireWire 800 compatibility.
www.tcelectronic.com

NEW PRODUCT

JZ Microphones has released the first microphone in its Vintage series. The V47, designed to give the sound of the classic U47, features a flask shape design with built in shock mount and swivel mount. The double diaphragm capsule uses JZ Golden Drops sputtering technology. "The sound of the 47 capsule has been a favourite in the recording industry since the middle of the 20th century," said Designer Juris Zarins. "Even then engineers found that the sensitivity of the 47 sound greatly enhanced the detail of their recordings."
www.jzmic.com

NEW USER

James Towler, Front of House, Studio and Tour Manager for Steve Winwood and Wincraft Studios, has been upgrading the recording chain at Wincraft. Grammy-nominated Towler purchased a new Prism Sound ADA-8XR multi-channel converter for the studio. "The clock inside the Prism Sound makes the sound much more focused and makes it much easier to pinpoint problem frequencies," he says. "It's just a great convertor to fulfil my core need of an AD and DA."
www.prismsound.com

NEW PRODUCT

The Q20 Recording Pack with HP20 headphones has been released by New York-based Samson Technologies. The Q20 is a dynamic hand-held microphone with both an XLR output and a USB I/O, allowing it to be plugged into a live sound console or any computer with a USB input. It also features a built-in 3.5mm stereo headphone jack with volume control, cardioid pick-up pattern, and A/D converter with 16-bit, 48kHz sampling rate.

www.samsontech.com

NEW APPOINTMENT

PLASA has appointed Linda Moore as Head of Sales and Marketing Strategy. Moore joins PLASA from Stage Electrics, where she has held the position of Head of Sales and Marketing for the past 11 years. She has served for five years on PLASA's Executive Committee, and so has considerable knowledge of the organisation. Moore will take up her new position with PLASA in February.
www.plasa.org

NEW PRODUCT

Paragon's Virtues In R22

Another new product announcement from JDK Audio, the brand developed and engineered by analogue recording specialists API. The R22 is a two-channel, rack-mount compressor with linkable stereo operation that uses true RMS power summing, a patented Thrust circuit for low-end, and an easy to use parameter control. The unit interconnects with both balanced XLR and quarter-inch inputs and outputs, and offers LED indicators and switchable analogue metering of output level and gain reduction, making it easy to optimise gain structure. It also has switchable hard or soft knee compression, and variable threshold, ratio, and make-up gain controls, delivering a wide range of compression textures.

"We're excited that JDK Audio's R22 offers the same in-line compressor formerly found only in Paragon consoles," said Larry Droppa, President of API. "Everyone who has ever used that compressor has fallen in love with it, and we predict the same will be true of the R22. The Thrust circuit is a unique addition to an already great piece of gear."

The R22, the fourth product in JDK Audio's line of robust signal processing equipment, will be launched officially at the 2010 Winter NAMM in California.

www.apiaudio.com

NEW PRODUCT

Echoes Of The Muffin Kitchen

Audio Ease has released some special impulse responses for use in Altiverb, using recordings of the acoustics of the tracking room and echo chamber in Frank Zappa's studio, the Utility Muffin Research Kitchen. Arjen Van Der Schoot, the creator of Altiverb – and a big Zappa fan – remembered a 1986 interview with Zappa in *Keyboard* magazine, in which he talked about an echo chamber in his house dedicated to reverb.

When Zappa's son Dweezil sent a tech support email to the company 22 years later, Schoot decided to ask him about the room, and ended up there a few months later recording the studio live room using DPA 4006 TLs and the adjoining echo chamber using the speaker and microphones that were in there – which were set up exactly as Zappa left them. Dweezil said about the responses: "When you hear the audio going through this impulse response, it's as good as standing in the echo chamber itself."

www.audioease.com

NEW USER

Audient's ASP8024 high resolution mixing console has been installed at Angry Chair Music, a Massachusetts-based project studio. Studio owner Paul Interlande had to replace his studio console after the facility was struck twice by lightning. Interlande used the disaster as a chance to research his options. "I am definitely 'old school', so I wanted an analogue desk with great features and a great sound," he said. "The ASP8024 fell neatly into all these categories."

www.audient.com

FIELD REPORT

BBC Scotland has used a large quantity of DPA microphones to record a one-off BBC Scotland broadcast, Scotland's History. The concert featured the BBC Scottish Symphony Orchestra, Eddi Reader and her band and McIntosh Ross from Deacon Blue. A pair of miniature omnis were used for grand piano with another 10 for first violins, and a total of 24 DPA 4060s for the other strings; all string sound came through the DPA miniature mics after the BBC took down overhead mics.

www.dpamicrophones.com

NEW PRODUCT

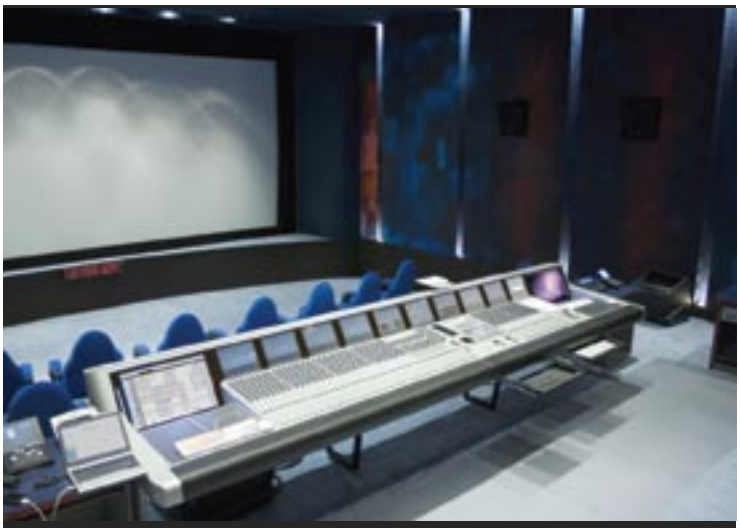
Australian company ARX has added the Qswitch to its AudiBox range of precision audio tools. The device allows you to switch any of four stereo inputs to one stereo output, or switch one stereo input to any of four stereo outputs. User-friendly annotation makes it easy to see which input or output is being switched – a bank of four latching interlocked switches mean you can only select one switch at a time, and a 'scribble-strip' lets you write above each switch with a Chinagraph or grease pencil.
www.arx.com.au

PRODUCT UPGRADE

The latest update to Novation's MIDI-control application Automap has been released. Automap v3.4 has an expanded on-board library of mappings – collections of assignments that tie knobs, faders, and buttons of Novation hardware to software parameters – for Logic, Reason, and Pro Tools. This involved completely rebuilding the mappings system to allow for the new additions, but now Logic, Reason, and Pro Tools are fully mapped, meaning that all plug-ins and software instruments that ship with the applications now have bespoke Automap markings. The update also includes firmware updates for Novation's Remote SL, Zero SL, SL Compact, SL MkII, and Nocturn Keyboard.
www.novationmusic.com

NEW LICENSEE

LOUD Technologies, the parent company of Mackie has announced the terms of the agreement with Avid that licenses the use of Mackie's new Onyx-i Series Firewire Recording Mixers with Avid Pro Tools M-Powered 8 software. Users will need to purchase the Mackie Universal Driver upgrade from the Mackie website. Once the driver is downloaded and installed, Onyx 820i, 1220i, 1620i, and 1640i mixers can be used with the Avid software. "For years, Mackie customers have wanted to combine the familiar workflow of an analogue mixer with the world's most popular DAW," commented John Boudreau, Vice President of LOUD's Music Gear group. "Through our newly-signed agreement with Avid, Mackie's Onyx-i mixers now make this possible."
www.mackie.com



NEW USER

To Russia, With Euphonix

Russian World Studios has installed a 56-fader Euphonix System 5 in its St Petersburg facility, with the EuCon Hybrid option for control of Pro Tools and Pyramix Digital Audio Workstations. RWS was founded in 1998 and is one of the leading TV content and film production companies in Russia, having been involved in more than 400 television and film projects locally and internationally. RWS-St Petersburg was opened in 2008 with the new Dolby Premier studio opening in late 2009. "We chose the System 5 Hybrid for RWS St Petersburg because of the tremendous reputation it has gained in the international film post production world," said Alexey Shulga, Lead Mixer and Head of Post Production. "The Hybrid control of Pro Tools and Pyramix speeds up our work significantly without using all our DSP resources."

The EuCon Hybrid option for System 5 digital audio mixing systems extends the control capabilities of the console, enabling users to bring Mac and PC DAW tracks onto the console surface for mixing. It uses high-speed Ethernet to communicate with the DAWs, reducing parameter change delays and increasing resolution.

"RWS is truly a world class studio, and it is very exciting to be involved in a completely new facility," said Chris Hollebone, Operations Director for Euphonix Europe.
www.euphonix.com

NEW FACILITY

Focused On The Future

Prime Focus has installed a fourth 5.1 sound studio at its facility in Soho, London. The suite, at 58 Old Compton Street, has 5.1 and Dolby E capabilities, and features Digidesign Pro Tools 8 and ICON D-Control console. The studio also has a large voiceover and Foley room, and a new audio preparation centre for multiple tracklays, transfers, and lay-offs.

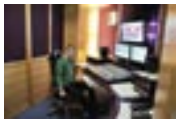
The studio has been designed for Dolby commercials and trailer certification. The facility was designed and specified by Jim Jacobs, UK Head of Audio for Prime Focus, and Paul Mickelthwaite, Head of Systems Integration. Director of Operations Michael Wrightson was involved in technical planning. Managing Director Simon Briggs commented: "Studio 4 is a key part of our ongoing investment strategy to upgrade and expand our facilities, not only to support client demand but also with one eye on our mid- to long-term future as we continue to explore domestic and global business opportunities outside of our traditional post production model."
Prime Focus
www.primefocusworld.com

NEW USER

RAS Audio Services has been using the SADiE PCM8 for challenging post duties on CBBC series Prank Patrol. "The show is very in your face and has well over 1,000 spot effects in just under half an hour," explained RAS's Richard Scott. "There's a lot of topping and tailing to do and cosmetic editing of the dialogue, some of which is of necessity not ideally recorded."
www.sadie.com

FACILITY UPGRADE

Cypriot company Lumiere TV recently added a new sound studio to its post production facilities. Designed and specified by Antonakis Christoforides, Audio Manager of Lumiere TV, the studio is built around a Digidesign Pro Tools HD and CI24 controller. The facility, based in Nicosia, will be used for general audio post work, including dubbing, TV promos, and commercials.
www.lumieretv.com



PRODUCT UPGRADE

Matthew Lane has released version 3 of the DrMS spatial processor plug-in. The new version was re-coded from scratch in a partnership with Mu Technologies, and is now a true native VST/AU/RTAS plug-in for OSX and Windows, no longer requiring the Pluggo Runtime shell. It is compatible with all major DAWs supporting VST, AudioUnit, or RTAS.
www.matthewlane.com

FACILITY UPGRADE

Universal Mastering Studios-West has relocated from North Hollywood to the former Hanna-Barbera animation studios building in Hollywood, and in the process has expanded the facility to include a main mastering room and five production rooms, with every room equipped with either Metric Halo interfaces or the company's OEM units. The studio masters projects for Universal Music Group and other clients, focusing mainly on restoration and archival services.
www.mhlabs.com

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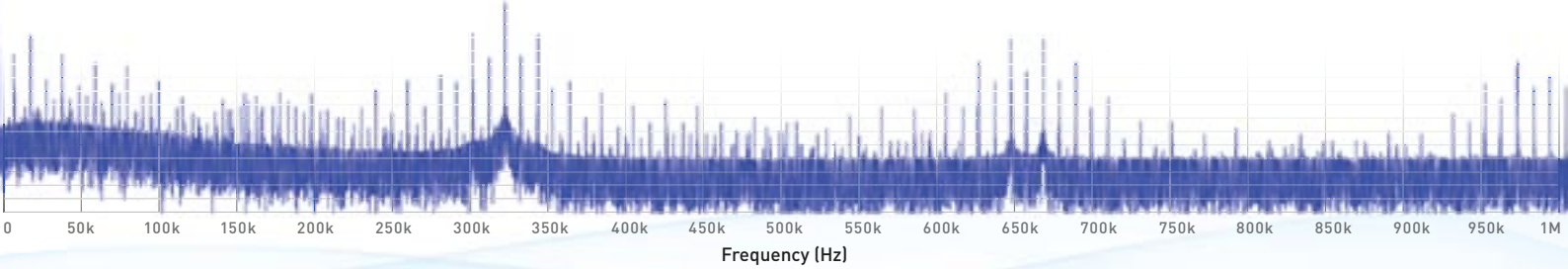

25 YEARS. PRECISELY.

NEW PRODUCT

Avid has announced some new solutions that could be useful to news production. iNEWS 3.0 and iNEWS Command 2.5 offer tools that enhance openness and integration.

The iNEWS Web Services API offers broadcasters the ability to integrate third-party systems such as groupware or automation with the iNEWS system to access and modify news content. The enhanced iNEWS User Interface simplifies navigation within the system, and the iNEWS Command Control gives customers support for third-party systems such as Chyron. New versions of shared storage solution Unity ISIS and the AirSpeed Multi Stream 1.3 ingest and playout server have also been released.

www.avid.com

FACILITY UPGRADE

Super Nova Changes

TV Nova, the biggest commercial television station in the Czech Republic, has been making some changes to its systems. The Prague-based station, which has been broadcasting since 1994 and is now owned by Central European Media Enterprises, has replaced its former audio processors with Jünger Audio's Level Magic technology to help prevent surprise level changes when switching from one audio source to another. "Level Magic provides a safe algorithm for controlling audio level and is functionally very reliable," said TV Nova Head of Service and Support Josef Uher. "Our engineers are very pleased with the performance of these units and with their overall sound quality." The adaptive level control algorithm is designed to adjust the level from any source at any time, with no pumping, breathing, or distortion.

The station has also recently taken delivery of its third Studer Vista console. The Vista 5 was commissioned for use in the new production centre, and has an SCore matrix, configured 282-in/192-out (including 64-channel MADI), 88 channels, 46 busses, and 13 shared processes. TV Nova also has a Vista 6, and a Vista 8, which is used for live news in prime time on the main TV Nova channel.

Jünger Audio

www.junger-audio.com

Harman

www.harman.com

NEW USER

WHBQ-TV, a Fox Broadcasting Company station based in Memphis, Tennessee, has installed a Solid State Logic C100 HD-S Digital Broadcast console. The station began broadcasting its local newscasts in high definition in June 2009, so had to move to an HD capable audio console.

www.solid-state-logic.com

NEW OFFICES

Broadcast facility systems integrator TSL is establishing new offices at The Pie Factory, part of the Peel Media-owned MediaCityUK development at Salford Quay, Manchester. The renovated factory includes sound stages, production facilities, and other specialist broadcast-based companies.

www.mediacityuk.co.uk

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PRODUCT UPGRADE

Axia partner WideOrbit has announced the newest version of its radio automation package. WO Automation for Radio software now communicates directly with Axia Livewire IP-Audio routing networks and networked mixing consoles. It can integrate with Axia Pathfinder and the Axia IP-Audio Driver, as well as Axia partner AudioScience's 6585 Livewire audio card. The software also comes with a VMix widget, which allows Axia clients to control their Element console's VMix configuration and faders directly from their WO screen. "Seamless integration with WideOrbit is a perfect example of why clients constantly tell us how easy it is to build studios with Axia," says Axia Vice President Marty Sacks.

www.axiaaudio.com

NEW USER

The Discovery Channel's series Mythbusters uses complicated science experiments to test popular urban legends. Production Sound Mixer Jepson has been using two linked Sound Devices 302 mixers, with audio sources including a Schoeps CMC6 boom-mounted mic or a Neumann KMR82 mic and up to five channels of Lectrosonics wireless lavalier mics mixed to the second channel. The mixers have stood up to extreme conditions, including a 115-degree sand storm in the Mojave desert, -50-degree temperatures in Alaska, and shooting for two weeks in the humid salty air in the middle of the Caribbean Sea.

www.sounddevices.com

NEW USER

The Power Radio Group in Istanbul has become the first user of Digigram's V*MOTE/V*CALL system. V*MOTE is an audio-over-IP software solution for remote contributions, useful for a journalist in the field reporting back to a studio. Installed onto a laptop PC, it becomes a professional 'contribution' codec. The first user was meteorologist Bunyamin Surmeli, who was out of Turkey on assignment in Los Angeles for a month. Power Radio's Technical Director said: "It was all so easy and straightforward. Training took precisely one minute flat for both the journalist and the DJ – once everything is installed, it takes seconds to implement."

www.digigram.com

In The Mood For Games

Lawo consoles are proving themselves versatile with some very different recent installs. In Germany, television channel Mergeformat Westdeutscher Rundfunk (WDR) has equipped its Big Band studio, Studio 4, with the latest generation Lawo mc²66. The edit suite, which is equipped with a Lawo crystal console, now has access to the GUI and audio channels of the new mc²66 using Lawo's VisTool facility.

Meanwhile, in Finland, the Finnish Broadcasting Company (YLE) has devised an original production network for the collection and reportage of events at the 2010 Winter Games that requires fewer personnel on site at the Games in Vancouver. In a joint venture with SVT, Sweden's national broadcaster, YLE's concept is to gather commentary and intercom signals at the Games and then route them to Helsinki, where they will be distributed to YLE production units for mixing. In collaboration with Lawo, it has devised a system for real-time audio routing and simultaneous scheduling, remote control, and monitoring of all matrices. YLE's Studio 25 in Helsinki, which is equipped with a Lawo Nova73 HD Matrix and mc²66 digital console will be the main production unit.

Lawo
www.lawo.de

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e-mail sales@sounddevices.com or visit www.sounddevices.com

NEW USER

The Moonlight Amphitheatre in Vista, California, has purchased an audio system that includes JBL PD5000, VerTec, and VRX Series loudspeakers. The theatre, while undertaking a major facility upgrade, decided to invest in a permanent system after years of renting every summer. The system was designed by Acoustic Dimensions and installed by Sound Image, and provides the venue with the flexibility to host one-off concerts and events ranging from rock to classical music, in addition to its primary summer use for Broadway musicals.

www.harman.com

FIELD REPORT

Muse has been touring with the support of a J-Series PA system from d&b audiotechnik, supplied by Skan PA Hire. Skan put together a system that can be loaded out in under two hours, particularly important as hundreds of miles are being travelled overnight between gigs. "Because we're playing 360° I wanted a single enclosure solution," said House Engineer Marc Carolan. "With Muse the information can get quite dense, yet the J-Series line handles that well."

www.dbaudio.com
www.skan-uk.com

NEW INSTALLATION

Eclipse In German Theatre

French company Innovason has installed an Eclipse system at the Bielefeld Theatre in Bielefeld, north-west Germany. One of the largest theatres in Westphalia, and home to the Bielefeld Opera, the venue has two auditoria. As well as hosting opera performances, the theatre also shows musical theatre, plays, ballet, and modern dance. The main theatre already has an Sy80 and Sy48, which are used in tandem for large touring musical theatre productions. Head of the Bielefeld technical team, Sound Designer Thomas Noack explained that the first Eclipse installation was a matter of necessity: "At the time, we were working from a control room that was way below the level of the stage – the Sy80 was the only console we could find at the time that didn't have a massive meter bridge which would have impeded our view of the stage!"

When it came to replacing the console running the smaller stage, the team considered several options before deciding to invest in another Innovason desk. "The philosophy of the system is marvellous – as it is with all Innovason consoles. It's the ideal tool for theatre use. Eclipse does absolutely everything we need it to do, and more," said Bielefeld Sound Engineer Michael Stellbrink.

www.innovason.com

Switching On To Channel Changeover

The channel 38 row rages on, as Ofcom announces the new licensing arrangements that will be implemented from January 4, 2010. The announcement included information that there will be a shared licence in place with channels 39, 40, and 69, although details are still to be released.

Audio-Technica has become the first supplier of wireless systems to attempt to address the situation, with the introduction of a significantly discounted trade-in scheme. The Upgrade Pass scheme entitles users to a discount on the purchase price of replacement wireless systems they have to buy as a result of the UK frequencies being auctioned off. Under the scheme, new purchases of Audio-Technica wireless equipment made between January 1, 2010, and December 31, 2011, will entitle the customer to trade in their systems when channel 38 equipment becomes available, with a 55% discount. Users need to register their products with Audio-Technica within 30 days of purchase.

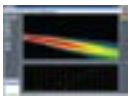
www.atupgradepass.com

FIELD REPORT

SADiE's LRX2 location audio workstation has been proving its suitability for live touring. Richmond Studio Productions chose the unit to record both the high-profile Children In Need Concert at the Royal Albert Hall and the F1 Rocks concert that followed the Singapore Grand Prix. MD Toby Alington said of the concerts: "We simply plugged in MADI, Wordclock and timecode, and the system ran perfectly."

www.sadie.com

PRODUCT UPGRADE



German loudspeaker systems manufacturer Fohhn has announced the availablity of the latest version of its system control software, Fohhn Audio Soft 3.0. The networking technology enables up to 255 connected devices with integrated DSP to be controlled and monitored from a central location using a PC or laptop and Fohhn Audio Soft. The new version includes a re-designed user interface. Active and passive speakers can now be graphically positioned on screen to show their actual positions in the room.

www.fohhn.com

FIELD REPORT

Norwegian pop superstars A-Ha have been touring throughout Europe and Japan promoting their first album in four years, *Foot Of The Mountain,* with a DiGiCo SD7 front of house and an SD8 on monitors. FOH Engineer Sherif El Barbari used the virtual soundcheck capability and recorded every show via an RME Madiface on to Steinberg Nuendo, as the band wanted spare tracks for a video shoot.

www.digico.org

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To learn more, visit www.ilive-digital.com

iLive: flexible, great-sounding mixing systems

FIELD REPORT

Florence and the Machine carried a combined iLive FOH and monitor system on their recent European tour, and on dates in the USA and Canada. They also used the same system at London's Roundhouse for the Electric Proms. "With iLive, I can turn up to any type of venue and just plug it in," said FOH Engineer Dave McDonald. "It's so simple and it's got expensive-sounding FX, good gates, and good compressors. The pre-amps are really great and the headroom's amazing."

www.ilive-digital.com

FIELD REPORT

Soundcraft has entered the Theatre of Death with the Vi6, as Alice Cooper has taken the console on his current UK and European tour. Cooper's Sound Engineer, Randy Meuillier, used the Vi6 for the first time at a fly-in show at the Skaanevik Festival in Norway. "I was an analogue engineer who was dragged kicking and screaming into the digital world," said Meuillier. "After these few dates with the Vi6 you had to drag me kicking and screaming away from it."

www.harman.com

FIELD REPORT

Midas Still Going For Gold

Midas – recently bought by the Uli Behringer-managed Music Group – is continuing to prove its live sound capabilities, with several high-profile events choosing to use Midas equipment. The Nobel Peace Prize concert in Oslo featured a network system of two XL8 live performance systems and three PRO6 live audio systems. One XL8 was dedicated to the 72-piece Norwegian Radio Orchestra and the house band, with the other console being used by visiting engineers to mix their own artists. Stage sound was provided by the PRO6s, one for each of the three stages.

A dual Midas XL8 system was also out on tour around the UK and Ireland with Snow Patrol. With a show featuring the six band members, 10 musicians plus special guests, all 96 channels of each desk were full to capacity.

The shock acquisition by the Music Group – a holding company set up by Uli Behringer and Micheal Deeb to purchase Midas Klark Teknik – is being touted by all parties as a positive move. In an interview with Audio Pro International, Behringer was keen to stress that the company would retain independence, stating: "I can guarantee that Midas/Klark Teknik will remain autonomous under the leadership of John Oakley and his team".

www.midasconsoles.com

FIELD REPORT

Outdoors In Doha

The inaugural Doha Tribeca Film Festival included a giant outdoor screening venue with a hugely powerful Dolby 5.1 surround sound system. A 24x10 metre screen was installed next to the Museum of Islamic Art, with 104 Meyer Sound loudspeakers.

The audio system, designed by Michael Rome of Boston Light and Sound, included front LCR arrays with eight MILO line array loudspeakers backed by two flown 700-HP subwoofers. Eight surround towers were erected on the perimeter, each carrying three MILO and three smaller M'elodie line array loudspeakers for near-field coverage. Eight UPJ-1P VariO loudspeakers provided front fill, while a Galileo loudspeaker management system with two Galileo 616 processors supplied signal matrixing and processing.

"The system gave us excellent dialogue clarity throughout the seating area," says Rome. "It did exactly what it was tuned to do."

www.meyersound.com

FIELD REPORT

Adlib Audio is supplying two-tone/ska legends The Specials with sound equipment for their current UK tour. The primary requirement was flexibility as the tour ranges from small arenas to provincial theatres. The main FOH speaker system is L-Acoustics V-DOSC, with some dV-DOSC and ARCS cabinets for larger shows. The lead singers have been supplied with Shure Beta 58 hand held radio mics.

www.adlibsolutions.co.uk

NEW USER

Drummer Steve Gadd has been using Earthworks mics on a European tour with James Taylor. He is using Earthworks Drum FullKit system, which includes one DP25/C on the snare, four DP30/Cs on the toms, two overhead SR25s, a SR30 on the hi-hat, another SR30 on the kick drum, and a KickPad. "A lot of people were talking about these microphones, so I tried them out and they were really good," said Gadd.

www.unityaudio.co.uk

FIELD REPORT

Sennheiser has provided microphones and in-ear monitoring systems for the MTV European Music Awards, held at the O2 World Venue in Berlin. The company supplied G2 series in-ear monitors for every performer, as well as SKM 5200 handheld mics with Neumann KK 105 capsules for all the presenters. Mark Saunders and Andy Lillywhite of Sennheiser UK were there to provide hands-on support.

www.sennheiser.co.uk

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Survival of the Fittest

KEVIN HILTON takes to the media jungle of radio to see what Darwinian theory has in store for the next digital generation. Will DAB be the only contender in the field for survival?

Radio is the great technological survivor. It co-habited with cinema and endured the onslaught of television through the 20th century to find new popularity and growth in the last 10 or so years. And far from diminishing radio and its influence, new technologies have given it a greater reach and impetus. Satellite and digital terrestrial TV platforms offer a wide choice of radio channels; Internet radio allows people to listen to services from around the world; and listen again players mean that the medium is no longer the ephemeral, 'miss it and you've missed it' entity it was in the past.

In a strange twist, technology developed specifically to push radio into the digital age has proved the most problematic. The UK committed to Eureka 147, the international standard for digital audio broadcasting (DAB), and from the beginning there were doubts over whether services other than simulcasts of existing stations would be available and when reasonably priced receivers would appear.

Digital-only channels were launched with the coming of the 21st century and receiver manufacturers eventually increased their ranges and broke the important sub-£100 and then £50 price tags in quick succession.

This did not satisfy the doubters: Eureka 147 was slammed as an 'out of date technology' and UK regulator Ofcom was lambasted for not setting a date to switch off analogue radio frequencies and migrate fully to digital.

The situation deteriorated further in 2008. Radio group GCap (later bought by Global Radio) closed three stations and proposed offloading its majority share in the Digital One multiplex. Channel 4 Television later pulled the plug on its plans for moving into radio, effectively putting an end to the proposed second digital radio multiplex.

Better news came in July last year with the Digital Britain Report, which set out serious proposals that mollified many sections of the radio industry. Although its author, Lord Carter, identified the lack of commitment to DAB as "the biggest barrier to radio's digital future" he did not recommend switching off analogue completely.

Instead there will be a 'Digital Upgrade', under which all national and large stations will end FM and medium wave transmissions by the end of 2015 and exist solely in the digital domain. But FM will survive and be made available for 'ultra-local' radio stations.

> "...there will be a 'Digital Upgrade', under which all national and large stations will end FM and medium wave transmissions by the end of 2015 and exist solely in the digital domain."

DAB continues to come under fire, with calls within the radio community for it to be replaced with DAB+, the second generation system that has been adopted in Australia, among other countries. This is not seen as practical in the UK, which is tied to the original version of Eureka 147 in terms of both transmitters and receivers.

Another possibility is DRM (Digital Radio Mondiale). This was developed primarily as a digital replacement for AM and long wave, with the BBC World Service and Deutsche Welle embracing it for their respective services. At the end of 2008 the two broadcasters launched a joint channel for Europe.

DRM has also been proposed for localised broadcasting, although tests at BBC Radio Devon during 2007, Project Mayflower, cast doubt on its suitability. The final report on the trails concluded that while DRM has 'potential', it is best suited to large-scale transmission. "The results of the trial seem to show that if Plymouth (with its level of co-channel interference) is typical of the rest of the country then DRM, based on the current pattern of the BBC's domestic transmission network, could only fulfill this role with careful spectrum planning and network design."

The chair of the DRM Consortium, Ruxandra Obreja, acknowledges potential problems with interference, agreeing that frequency plans have to be made carefully. She does not, however, see "DAB for the big boys and FM for everyone else", effectively analogue islands in a sea of digits, as the way forward. DRM+, which works on a single frequency instead of a costly multiplex, could be more viable in these cases, Obreja says.

IBOC (in-band, on-channel) the technology used in the US under the name HD Radio has some followers in Switzerland but it is not seen as a practical for the UK. Satellite subscription services have been in the background for several years, but British listeners would probably baulk at paying for radio. ONDAS Media has big plans for Europe but so did WorldSpace, which has not been as all-conquering as it set out to be. This was shown at the end of last year by WorldSpace's service in India shutting down.

Despite its shortcomings DAB has been embraced by most British people, who, after all, have a fondness for heroic failures. Not that ten million digital radios sold by the end of November 2009 is a complete failure, especially as five million of those were clocked up in only 30 months.

More competition and confusion could come this year with the launch of the Radioplayer. Developed jointly by the BBC and commercial radio groups, this virtual console will appear on radio station websites and give access to live programming and on-demand audio material.

The Digital Britain Report recognised the cases made for the various digital radio technologies – DAB, DAB+, DMB-A, DRM – as well as online broadcasting, but concluded there is "too much regard to technologies and too little to the real drivers of change, the listener".

Ruxandra Obreja agrees that programming is vital but says "an alignment of the stars" is needed – all the technologies, broadcasters, and associated organisations coming together to create a new digital world of radio. This could be a patchwork of formats but that would be little different from analogue, with FM, MW, SW, and LW.

The real need is for people to be more patient and allow technology to settle. Not easy in an age when a new app for the iPhone appears every 10 seconds. But radio has proved over the years that it is a marathon runner, not a sprinter.

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The Freemasons

The Freemasons' logical choice of interface

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Facilities Sector Report Ready To Go

Did you ever wish that your business plan was based on more than just guess-work? Want to know which sectors are growing and which have stagnated? With the leg-work complete, a treasure trove of facility-friendly facts are ready to roll...

The UK Screen Association is probably best known in *Audio Media* world as the trade body behind the Conch audio post production awards. It is, however, bigger than audio and has a membership of over 140 service companies in the film and television screen industries. Amongst its stated aims are to "support the commercial interests of our member companies," to provide "a conduit for communication between the sector and Government...", and to be a "strategic lobbying group, interacting with government agencies."

To do any of this though, you need some good information about your members' industry – something that has been conspicuous by its absence in much of the media production world.

This is about to change with the publication of *The UK Facilities Sector* – a hefty and comprehensive report on the facilities and screen services industry, including structure, financial performance, employment, revenue sources, exports, taxation, and much more. And there's plenty of audio-specific material. In other words, if you were ever concerned that you have been running your studio by relying too much on the 'wet finger in the wind' method, help is at hand.

Gaynor Davenport, Chief Executive of the UK Screen Association, together with the Association's board, commissioned the report, which covers findings and trend data from 2006, 2007, and 2008.

"Without quantifying what the sector represents in economic terms, it's very difficult to actually engage meaningfully with government its agendas," explains Davenport. "This is the first time that anybody has attempted to comprehensively map the whole of the service sector. Our reason for doing it is to underline just how significant it is, in terms of the contribution it makes."

But there are plenty of other motives. "It's about getting profile in terms of government agendas in digital strategy, innovation, skills...

"...And we were being asked for information from all sources – from our members in terms of their normal business planning and being able to benchmark their own business in the context of the sector they are working in. And we were getting a lot of interest from finance-based business – lease financing companies, people who are looking to invest in the sector, which is also obviously important from our members' perspective, if they are trying to position their own business in front of a bank, for example."

The report was funded jointly through sponsorship. The three principal funders are Ascent Media, the UK Film council, and the UK Screen Association. There were also investments from UK Trade and Investment, and Tenon Media – an accountancy company.

We'll have more from the report in coming months, but if you want to get hold of a copy for yourself, it is available from the UK Screen Association priced at GB£250 for non-members and GB£150 for members (plus VAT).

INFORMATION

Ⓦ **www.ukscreenassociation.co.uk**

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MEDIA MATTERS

Public broadcaster Radio France runs services for the domestic audience, French overseas territories, and foreign audiences. Radio France Internationale is one of the world's leading international stations. Its Arabic-language Monte Carlo International service is available on medium wave (AM) and FM in many Middle East countries.

The international French-language channel TV5 Monde, financed by Belgium, Canada, and Switzerland, is available globally. Global satellite news channel France 24 launched in December 2006 with services in French and English. Its Chairman said the channel aimed to present "a different point of view from the Anglo-Saxon world".

France's flagship TV station, TF1, was privatised in 1987. The growth of satellite and cable has led to a proliferation of channels. Major satellite pay-TV operator CanalSatellite is controlled by media giant Vivendi Universal.

A digital terrestrial TV service, with more than a dozen free-to-air channels, is being rolled out.

France's long-established commercial radio stations, particularly RTL and Europe 1, still command large audiences. They have been joined by a multiplicity of FM stations, often consolidated into successful commercial networks such as hit music station NRJ and oldies station Nostalgie.

VITAL STATISTICS

FULL NAME	French Republic
AREA	543,965 km² (210,026 sq miles)
MAJOR LANGUAGE	French
MONETARY UNIT	1 euro = 100 cents
MAIN EXPORTS	Machinery and transport equipment, agricultural products, including wine
GNI PER CAPITA	US $42,250 (World Bank, 2008)
INTERNET DOMAIN	.fr
INTERNATIONAL DIALLING CODE	+33

Globe Audio Refurbishes for 10th Anniversary

Globe Audio Mastering in Bordeaux celebrates its tenth anniversary this month (January 2010), and has recently has undergone major refurbishment including substantial investment in new equipment and technology for its main room. Co-owner Alexis Bardinet reports that business at his SW France complex is buoyant.

"Since we re-opened the main room in January last year we have had excellent feedback from all the engineers and artists who have mastered at Globe," says Bardinet. "Business is still doing very well, despite all the talk of recession.

"I believe many of our clients are disappointed with the 'on line mastering' process. They want real mastering, not a preset executed by an assistant at the end of a telephone line. I think that in this day of the crazy virtual world, the human contact feeling and 'real work' are the keys to our success. We have received a platinum disc for the Cocoon record, and Tom Frager is doing very well and will soon be platinum – the single Lady Melody was at No.1 in France for four weeks.

Globe has enjoyed considerable growth over its relatively short existence. By 2007, it was mastering almost 200 albums a year and that level of activity was maintained for 2008 – with an increasing number of projects coming from other countries including the UK and US. "This level of work encouraged us to invest further and make more serious investments," says Bardinet.

Central to the refurbished main room is the Manley Backbone mastering insert switcher. This unit allows precise control and manipulation of up to eight pieces of outboard gear. "This really has changed the way I work," says Bardinet. "The MS mode is very useful and the eight switches are perfect for mastering work. Our new Lavry Gold converters also raise the quality bar."

Also new are an Avocet monitoring controller, Tube Tech multi-band mastering compressor, and vintage customised Neumann equaliser. The Studer A80 half-inch machine came from Montain Studios in Montreux, while all connections are now made using Audioquest pure silver cables with gold connectors.

"We've also just bought the new Maselec MLA-3 multi-band compressor which is really incredible, it offers new perspectives for mastering. Since I got this unit I've used it every day. And of course we have never had cause to regret our initial major investment in the acoustics at Globe – so important for accurate mastering," adds Bardinet.

"We are always keen to test new gear and assess its possibilities – and also vintage kit. "I'm always on the lookout for rarities to add to our portfolio."

Matrix Magic at Studi-Oh!

Set midway between the city of Lille in northern France and the Belgian border, Studi-Oh! aims to offer "the perfect recording and mixing environment" for its clients. With three spacious and flexible recording spaces set around the central control room, Studi-Oh! is ready to take on the most demanding sessions.

One look around the control room tells you that Studi-Oh!'s equipment has been sourced by fanatics of classic circuitry and pristine audio paths. Outboard from the likes of Chandler, Manley, Universal Audio, Drawmer, and Amek are in plentiful supply, while the microphone cupboard is amply stocked with Neumann, AKG, Royer, Manley, and Avalon. And at the heart of the control room is an SSL Matrix.

"I record, mix, and master here at Studi-Oh!, and you can take it from me that this console may be compact, but it's hugely versatile," says Engineer and Producer Jeremy Darme.

"Matrix has changed the way we work here at Studi-Oh!. From the speedy DAW control with its customisation and exemplary stability, to the access to plug-ins that mean you spend a lot less time looking at the screen or using the mouse to control edits and the like.

"Matrix also totally respects the sound of my mic pres and mics. But on top of that I think Matrix really improves the sound. The summing is fabulous and we also have SSL Alpha-Link A-D converters, which are great. So when we're mixing you can tell that the Stereo image is much more open and the mix is larger… it's just like magic."

Radio France Opts for Eclipse & SADiE

Studio 106, one of the principal live studios at Radio France, has recently been equipped with an Eclipse digital mixing console from Innovason. This is its seventh console from the French manufacturer. Nevertheless, it was far from being a foregone conclusion – the Radio France technical team tried out four different consoles from four major manufacturers before settling on the Eclipse as the optimum choice.

"Studio 106 is one of our most important live studios that plays host to all kinds of live musical broadcasts from rock and roll to classical concerts and everything in between," explains Studio Chief Pascal Coulloux. A regular fixture at Studio 106 is the daily radio programme on France Inter, Le Fou du Roi with French radio and TV personality Stéphane Bern, which takes a light-hearted look at current affairs, entertainment, and politics. "The sound inside the studio is as important as the sound that is broadcast so we decided to invest in a live console of the highest calibre," continues Coulloux. "Although we already have several Innovason consoles throughout Radio France, and we are very happy with them, it is by no means an exclusive arrangement, so we tried out several consoles from brand leaders before we finally went for Eclipse."

The studio is a totally configurable space with moveable seating that can accommodate an audience of up to 150 people, a motorised ceiling that can be raised or lowered according to requirements, and moveable walls. "This allows us to adjust the acoustics of the room depending on how it is being used," explains Coulloux. "It's a highly flexible, multi-purpose space, and we needed a console that would reflect that in terms of set-up and configuration. Eclipse has proved to be the ideal choice."

The console is responsible for handling both monitors and FoH, running anything up to ten monitor channels either on in-ear systems or traditional wedges depending on the requirements of the musicians. "It's not always straightforward running monitors and FoH from the same console, but Eclipse handles it with ease," remarks Coulloux. "The SmartPanel function which allows you to configure and manage whole groups of faders on just one fader and see exactly what is going on at any given moment is just fantastic. The internal effects are also superb, and of course the desk sounds amazing. It has made a huge difference to the audio quality within the studio and therefore to the quality of the audio that is broadcast as well."

Coulloux also cited ease of use as being an important factor in the decision-making process. "It certainly helped that our engineers were already

very comfortable and familiar with the Innovason way of doing things," he says.

Radio France has also purchased three SADiE LRX2 portable multi-track location recording systems and two PCM2 laptop-based editing systems. The units will be used for mobile production across France to provide content for the broadcaster's seven national stations.

"There are things that make SADiE really easy to use, even by people with a poor knowledge of computers, especially the project, the clipstore, and the slip modes in the playlist editing. For high-end users, the trim window is wonderful," comments Philippe Destrebecq, DPA/DLP/Responsable du support production at Radio France.

The SADiE LRX2 Location Audio Workstation has been designed to fulfil the needs of an ever more complex recording environment and to serve a wide variety of remote recording applications. It combines SADiE's professional audio input and output 'slither card' I/O modules with a tactile hardware control surface and the ability to use a standard laptop via USB2 as the host computer to provide a powerful and effective combination according to the particular application. The SADiE PCM2, meanwhile, is a non-destructive hardware audio editing system complete with SADiE Version 5 software. It provides the ability to edit audio professionally wherever the user can take a laptop running Windows XP.

"The LRX units have been used at musical festivals in Beaunes, Saintes, La Roque d'Anthéron, and the theatre festival of Avignon," reports Destrebecq. "We're currently planning to buy three more of them in 2010 too to increase our coverage across the country."

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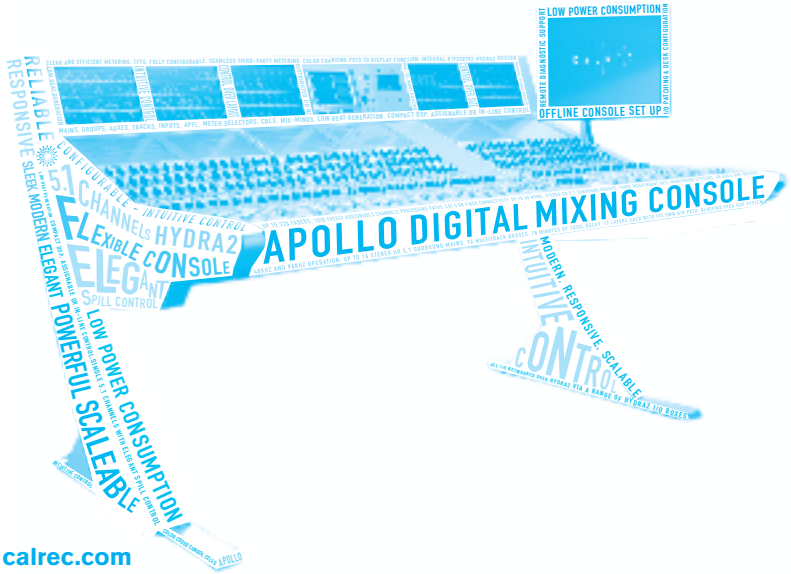

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APOLLO

Special **Report**

Big City Cinema, Small Town Store

JO FLETCHER-CROSS looks at an interesting collaboration and discovers a new way of going to the movies.

If you love films and live in London, chances are you will have been to one of the five Curzon cinemas in the capital. If you live anywhere in the UK, chances are you will have been to a branch of HMV. Now the arty cinema group and the UK's leading retailer of films on DVD and Blu-ray have collaborated to offer a new kind of cinema-going experience.

Curzon Artificial Eye was formed in 2006 from the merging of Curzon Cinemas and Artificial Eye distribution. The chain includes Curzon Soho, the UK's busiest cinema, with the highest income per seat. Distribution group Artificial Eye was founded in 1976, aiming to distribute the best in European and world cinema. The company's film library includes 300 European and world cinema features and 15-20 new theatrical titles. It also has a wholly-owned DVD and new media sales operation.

The HMV brand dates back to 1921. Recently the company, under the direction of Chief Executive Simon Fox, has set its sights on becoming the country's leading multi-channel entertainment specialist, expanding into online gaming, live music venues, and ticketing, and developing a new format for its stores.

Now these two companies have joined forces for a cinematic experiment. In October 2009, hmvcurzon opened its first cinema in Wimbledon, South London. Digital technology has eradicated the need for a projection box, so smaller spaces can be used for cinemas – in this case, non-trading second floor space above the existing Wimbledon HMV store.

When a film was started on each of the three screens – Red being the largest with 103 seats, Blue following at 90 seats, and Green with 70 – it was immediately obvious that the quality of the visuals was fantastic. But what about the sound? In these intimate spaces, any audio flaws are going to be incredibly hard to hide. A Munro Acoustics sound system has been installed, at the insistence of Philip Knatchbull, Chief Executive of Curzon Artifical Eye. "It was his decision," says Richard Napper, Managing Director of Curzon Artificial Eye. "He had heard the system at the Lexi cinema in Kensal Rise. Munro designed the sound system there, and it was quite a challenging space. He knew he wanted a Munro system for this space too."

Munro Acoustics is well known in the recording industry for its sound facilities, equipping the UK's major film sound dubbing suites at Pinewood, Shepperton, and Elstree. It has been producing high end studio monitors for 15 years and played a major role in the development of Danish brand dynaudioacoustics and its monitor range, designed especially for film. This is a company that knows what it is doing with movie sound, so it is perhaps not surprising that it is developing a reputation for designing and installing high-quality cinema sound systems. The company's first cinema project was the highly successful Kino Digital cinema in Hawkhurst, Kent; a small cinema owned by private investors, aiming to provide a high quality venue and cinema experience in the heart of the local community. Munro installed a 15-speaker Dynaudio system there. Although it is in the heart of a busy London suburb, the Wimbledon hmvcurzon is not such a very different project to the Kino Digital cinema; both wanting to offer a space that could become a cultural hub for the local community rather than just another faceless out-of-town box. "It is a nice intimate space", agrees Andy Lewis from Munro Acoustics. "It was fairly simple to put together; every room's got the same system, three screen speakers, a couple of subwoofers, the same amps." Each system incorporates ▸

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- three of Munro's flagship MF3 Screen speakers, based on the Dynaudio Acoustics M4 and M3FX studio monitors. The MF3 uses a 4x12-inch bass section, 2x6-inch mid section, and two Esotar soft dome tweeters in a short waveguide. All drivers are by Dynaudio. Also in the system are two Munro MF18 subwoofers, five Dynaudio T2000 amplifiers, two Dynaudio T4/250 amplifiers, and three TC Electronic XO24 digital cross-overs. In the Red and Blue auditoria, there are eight Munro MF15SR surround speakers, and six in the Green auditorium. These use a Dynaudio 10-inch bass driver and soft dome tweeter, and so offer studio monitor quality.

It would be exciting to think that a top-quality, flexible cinema space like this could be coming to high streets all over the country. "If this one is successful, then yes, we would be looking for other locations where we could roll out the concept," said Richard Napper. "We hope that we're offering something different. People don't always want to go to a big soulless multiplex. They don't always want to see an art house movie. Why can't they see a blockbuster and something more challenging in the same space, without having to travel far from home?" When it comes to actually saying when this will happen, and if it will have the same technical specifications, he is a little cautious. "This is an experiment. And quality of this kind isn't cheap. So obviously people will be looking to see if it pays for itself, and we don't want to rush it – we want to give this a good trial and let it show its worth."

We watch the trailer for *The Imaginarium Of Doctor Parnassus* together in the Blue screening auditorium, and the sound is rich and clear. The film operator comes down to ask us if we would like him to change the volume, and is enthusiastic about how easy it is to do just that. What does he think of the sound quality? "It's brilliant – we've been playing loads of rock music at full volume while we sort everything out. Doesn't it sound amazing?" Hopefully it will be sounding amazing at a cinema near you soon.

INFORMATION

www.hmvcurzon.com

Start as you mean to go on

Its no secret that Focusrite had a good start in life. Our first mic pre (the original ISA 110) was commissioned by Sir George Martin for Air Studios. The brief was simple, a no-compromise mic-preamplifier and EQ circuit. He liked it so much, he asked us to build one or two more.

It turned out that Sir George was not the only one who wanted clean, whisper quiet pre's. 25 years on, the iconic ISA design continues to capture details, not create them. Focusrite have been working with select retailers to establish a network of UK pro-dealers. These stores will be the only outlets in the UK where the ISA and Red ranges, the Liquid Channel and Liquid 4PRE will be available.

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Blink-182 drummer Travis Barker performed a show-stopping solo while suspended in mid-air, spinning on a giant turntable. Along for the ride were a selection of Audix microphones, including M1244As and Micro-Ds.

Back in a Blink

Did you miss them? Well, in case your eyes are still squeezed tightly shut, they're back – CLIVE YOUNG feels the playful vibe at Blink-182's reunion.

After breaking up a few years ago, Blink-182 has returned as strong as ever, as the trio spent 10 weeks this summer playing sold-out sheds and arenas, serving up smart-alecky punk pop, merrily lurid antics, and a flying drum throne of the sort not seen since 1980s Motley Crue tours. Fans ate it up, and with good reason – in these troubled times, the band's playful attitude was a welcome change-of-pace from the world outside the venues.

If the tour was a reunion for the group onstage, however, it was also one behind the scenes, as Dave Rat, head of Rat Sound (Oxnard, CA), manned the FOH desk. "I've mixed them from clubs to arenas," he said, "so when they got back together, they asked me if I'd come back and join them. We've had nothing but a great time."

A goofy attitude was abundant onstage but could be found at FOH as well, as Rat carried with him a custom-built 'wireless remote-control unit' for the console, which he'd named VCA-11. Most people would call it a yardstick covered in pink tape. As he used to it push faders from a small distance, Rat helpfully pointed out, "We drew an on/off switch on it, and we leave it on because we have batteries, so that's not going to be a problem."

> "I ran into a problem about three or four shows in where I realised I didn't have enough cowbell. Seriously!"

All kidding aside, the stick underlined the mix strategy Rat uses for every tour. "I try to create a near auto-pilot situation where I could step away from the board and the mix would stay together. They'd have to do something catastrophic onstage to pull the mix apart."

Of course, that kind of mix only works for the right kind of band; for a show like Blink-182, Rat created what he termed a "very vocal heavy, 'cartoony' mix with saturated colours. I'd much rather have something jump up in volume, step on you and fall back into the mix. When they step on pedals, I don't correct for the huge guitar jumps, so they're really in control of a lot of those dynamics."

All those guitar jumps were captured via four Palmer DIs, while the bass was heard via two Avalon tube DIs; the result was that the only open mics were on the drums and two vocals – all of which were Audix, with whom drummer Travis Barker has an endorsement deal. "It was fortunate it was Audix," mused Rat, "because it's probably the only company that actually could put every mic up on this and not have me be bummed." As a result, Barker's drum kit was surrounded by M1244As, used for overheads, hi-hat, second snare, and the ride cymbal, while Micro-Ds captured the toms. All of them were attached for the long haul to the drum riser, which flew and spun in mid-air, thanks to cables.

At stageside, Monitor Engineer Steve Walsh oversaw a Yamaha PM5D console, running Version 2.3 software, which sent mixes to Sennheiser G2 personal monitor systems with Ultimate Ears earpieces (one day, Walsh realised he'd accumulated far too many UE boxes – so he got the band to sign them and gave the boxes away to random fans walking by the back gate). Filling out the monitors onstage, a pair of Rat Supersubs provided drum fill, while four flown L-Acoustics Kudos and a Rat Supersub were used per side for sidefill.

Most of the monitor mixes were as one might expect, with the exception of vocalist/guitarist Tom DeLonge. Walsh explained, "He needs help at around 2k and because of his hearing loss, he tends to listen to his pack too loud. There's a really nice onboard multi-band compressor on the 5D that we started using on his vocal; it really gives him a nice, tight peak when he's looking for it, without ▸

distortion, so we're actually able to back off."

Fans heard the shows clearly too, via a new L-Acoustics K1 system; Rat Sound is one of only two vendors in North America offering the PA during the system's pilot phase. "Here I am on the newest – and what I believe to be the best – PA in the world," said Rat. "I wanted to highlight the sound system by going intentionally old with everything else; a Midas XL-4 is 25, 30 grand at the most, and everything else is just cool, old gear that everybody's familiar with." Some of that gear included a Lexicon PCM60 for snare, toms, and vocals, and a TC Electronic Voice Doubler used on slower songs. "I have an Eventide 3500 as a multi-purpose spare," said Rat. "Since I'm using old gear, stuff breaks, and when you only have two effects, you can't afford to lose one."

The new L-Acoustics PA consisted of 24 K1s, eight K1 subs, two-dozen Kudos, 24 SB28s, eight Rat Supersubs, and 12 dV-Doscs for the main system. Along for the ride were LA-RAK amp racks loaded with LA8 amplified controllers running LA Network Manager control software. "We have some K-1 subs in the truck but we haven't been setting them up because the way I mix, the added low end wasn't needed," said Rat.

There was plenty of low end, however, courtesy of two new subwoofer configurations that Rat developed with Scott Sugden, L-Acoustics' technical support person. The imposing Vortex arrangement, used in arenas, stands almost like a tiny Stonehenge, with four stacks of three SB28s set up in a square, complete with floor frame and trucking straps around them to keep the stacks from blowing apart. Working best away from walls, each stack blasts into the side of the next stack, except the outermost one which faces the audience; by using time offsets ranging from three to 7.5 milliseconds, Rat found the configuration can provide increased LF coverage to arena sides anywhere up to 270 degrees, while getting cancellation on stage.

FOH Engineer Dave Rat oversaw a Midas XL-4 console on the tour, seen here during soundcheck for the drum solo.

"We increase the horizontal coverage and we decrease power alley-ing so it doesn't have that big, loud bump in the middle that everybody's got that dies off to the side," he said. "We have the ability to negate that and bring it down so it's even all the way across. Typically, if you go with the normal sub setup, one third of the audience is in the middle and two thirds have lousy subs because they're off to the sides. With this, there's always going to be errors, but I'm actually able to get 80 to 90 percent quality sub everywhere rather than the 30 to 40 percent which is typically acceptable."

The other sub configuration tried out on the tour is the Slotfire, used in sheds, where four stacks of three SB28 are paired off, facing each other about 18 inches apart. "So I've taken a massive amount of subs and created a point source out of it, and then a third of a wavelength away at 45 cycles is another point source. So I have two point sources exactly a third of a wavelength – if I turned them flat and did them a conventional way and you put them a third of a wavelength, it would just be a wall of subs, right? But now I have two point sources with distinct point sources a third of a wavelength. Then you take the outside stacks and you delay them a sixth of a wavelength – that plus a third is one-half wavelength, which means that I have 180 degrees cancellation on stage." For a lot more on these concepts, visit Rat's tour blog at ratsound.com.

At the start of the tour, the PA system was initially only getting a mix of 20 channels, but Rat found as the journey progressed that something far less technical was missing: "I ran into a problem about three or four shows in where I realised I didn't have enough cowbell. Seriously! And that's the only change I've made to the setup: adding an Audix Micro-D for it – because you really can never have enough cowbell."

Monitor Engineer Steve Walsh used a Yamaha PM5D to send mixes to the band's Sennheiser G2 personal monitor systems with Ultimate Ears buds.

INFORMATION

Rat Sound
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L-Acoustics
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While ALISTAIR McGHEE mourns the absence of the Sound Devices 442, Fostex has snuck in the back door with an offering that might just fill the gaping hole in the market: the four-channel and affordable FM-4 mixer.

FOSTEX FM-4

Portable Location Mixer

There are some segments of the audio market where you feel there just isn't room for another competitor. Take portable location mixers. SQN, Audio Developments, Sound Devices, PSC, Shure, Sony, Sonosax, Wendt… the list goes on and on. Surely you'd be mad to pitch into this crowded market? Well, Fostex didn't think so. It opened its batting with the FM3 – a three-channel ENG style mixer that comes loaded for bear (get all your lines from *Call of Duty 6 special ops* – I do). Featuring an organic led display, quality construction, and a wide range of connectivity, the FM3 signalled that Fostex was serious in its attempt to muscle into the over-the-shoulder market.

FM-4 On The Field

And if further proof were needed, here comes the FM-4. Let's have a quick gallop round the specs. Four mic inputs with phantom and T powering, an Aux input on five pin XLR, XLR4 for DC in (hurray!), and DC out for your radio mic RX. Four XLR outputs that can be configured main and stereo sub, or direct out post fader. All with switchable gains (+4,0,-10,-60); and two Aux outputs on 3.5mm jack switchable and selectable between direct outputs 1-4 and mix/mono, and a tape out again on 3.5mm. Finally tape return and two headphone jacks (little and big) that complete a lot of connectivity.

The front panel has four rotary faders, each with trim, pan, and LF (off to 200Hz) filter knobs and individual masters for left and right. And two very interesting features: the first two channels of EQ are switchable between any of the four inputs. You get a sweepable mid offering plus or minus 12dB from 200Hz to 8kHz, and an HF shelving control giving plus or minus 12dB at 10kHz. The EQ is pre-fader and is not noiseless switching – it's a small click but audible.

The second notable feature is the organic LED display, something Fostex is keen to shout about. It's small but clear and offers a white on black image of two VU meters with bargraphs alongside. The meters take a little getting used to, though seem to operate without any annoying lag.

Between the meters is a large battery icon giving an easy to read power level indication. The screen also does duty for the menus, which are controlled by the Status button and two custom controls. The meter display has adjustable contrast including a setting that effectively switches off the display. How to give your sound recordist a heart attack in one easy step!

The Time Is Not Now

Fostex has obviously decided the time is not yet right for a digital mixer, as the FM-4 is an analogue device. However the FM-4 does offer digital dividends in terms of display and configuration. The status button allows access to four status pages – input, output, meters, and sys info. The input page allows you to see line/mic and phantom status without having to unvelcro your bag, and here you can enable the T power option and see at a glance whether the Aux input has been activated.

These display options might seem a bit superfluous on a small mixer you can neatly hold in one hand, but by the time it's wrapped in a canvas case and festooned with cables, checking small side mounted switches in poor light and heavy rain is a real chore. The push of a button has much to commend it.

On the output page you can confirm the level settings for the outputs and whether they are carrying main/sub or the post fader direct outs. You also get the info on the aux output level settings and what sources are feeding them. While on the subject of outputs, the circuit diagram for the FM-4 contains reference to a digital option capable of feeding both the sub outputs and an 'output port'. I can't see any room for it, on the unit, so this might be a teaser for the 'FM-4.1' – I'm not sure? From the output page you can also adjust some basic settings for the limiter ratio and threshold.

And the cuteness prize goes to the PFL metering. Depress a channel PFL button and the meter switches to a darling little mono vu meter – oh! It's the little things. The sys info page has battery voltage, internal temperature (remember cold is bad for batteries), and powered up time, handy for working out the overtime payments you would have had if you worked in an industry that paid overtime.

Nearly ten years ago Sound Devices set the cat among the mixer pigeons with its 442 four-channel mixer, and this has really set a marker for location four channel mixers. We're still missing the glorious but gone forever Coopersound 104, but that's probably not what Fostex was aiming at. Surely Fostex had a 442 on its test bench during the FM-4 design, as sitting my 442 on top of the FM-4 shows a nearly identical footprint.

On The Front Line

Comparing the front panels I think the Fostex labelling stands a bit more simply by using a bigger and brighter font. Both mixers make extensive use of pots that lock back into the surface of the panel. The 442 has custom profiled faders, while the FM-4 deploys nice knurled aluminium on the main pots. The extra EQ knobs on the FM-4 compress the channels into smaller spaces, but the clear labelling helps to maintain usability. The 442 gives you broad sweep metering that is easy to read, but the OLED screen on the Fostex allows you that nifty status interrogation. Both mixers offer output limiting, but the 442 has the option of a limiter on every input. However, the lack of a display on the 442 means you'll probably need a crib sheet to remember more obtuse functions like disabling the input limiters.

The 442 has a link and an MS option on inputs one and

THE REVIEWER

ALISTAIR McGHEE began audio life in Hi-Fi before joining the BBC as an audio engineer. After ten years in radio and TV, he moved to production. When BBC Choice started, he pioneered personal digital production in television. Alistair is now Assistant Editor, BBC Radio Wales, but is allowed out occasionally.

two, and includes a phase reverse option on channel two. Very handy in MS working. The FM-4 doesn't offer any phase reverse options, but has linking on channels three and four as well as one and two.

Both mixers have comprehensive monitoring options, including MS decoding. The 442 has two return feeds to the FM-4's single return, but the FM-4 has dedicated monitoring for its Aux input. For me the FM-4 has its headphone monitor switch too near the strap lug, making adjustment fiddly with banana fingers like mine.

At 2.3kg, the 442 is half a kilo heavier than the aluminium-clad FM-4, despite taking only four AA cells against eight for the FM-4. In hand to hand combat the 442 will definitely kill your opponent, while I think the FM-4 will probably just maim them. The build of the 442 is uber pro – at a pinch I think I could stand on it. I would definitely stand on yours. The FM-4 claims seven hours running without phantom – I stuck a Rode stereo on there after running the mixer for about an hour on and off with dynamic mics. I got an additional hour and a half before the power LED began to flash.

Side by side, I liked the sound of the FM-4 – clean and crisp, and you can light the channel reds and main overs without nasty distortion. On a simple AB the 442's limiters seemed to do a better job of holding back the waves, but I didn't test all the FM-4 limiter settings, and just reading the instructions for changing the settings on the 442 gave me screen envy.

Conclusion

So what's the verdict? Well in one sense it doesn't really matter – Sound Devices has discontinued the 442. I can't believe it. But it's true, and good news for Fostex as its absence leaves the affordable four-channel sector wide open. The Sound Devices 552, which is currently the replacement for the 442, is a different beast altogether with built-in recording and costing £1,000 more than the FM-4. Which makes the FM-4 a very attractive proposition. It's professional, it has plenty of features, it shows innovation while maintaining ease of use, and it sounds good. I like it.

INFORMATION

Ⓔ **GB£2,300.00 (exc.VAT)**

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SONY VEGAS PRO 9

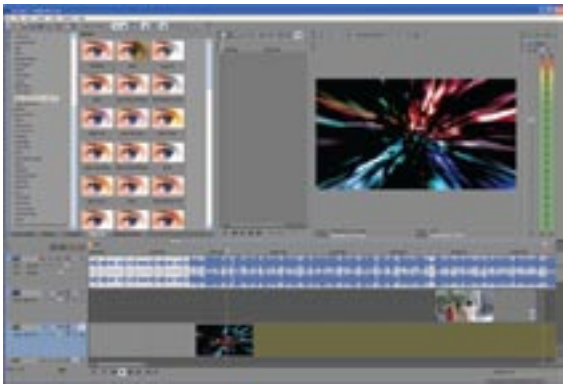
Video Editing Software

How is Sony's flagship video editor keeping up with the competition? RICHARD WENTK finds out.

Vegas Pro has never quite overwhelmed the high-end market that it's pitched at. It remains a very competent editing product, but has always lagged a little with add-ons and extras. Version 9 is a slipstream upgrade that adds some interface enhancements and supports a new format or two, but doesn't drastically update any of the basic features.

A Quick Re-Cap

For newcomers to Vegas Pro, it's worth recapping its main features. The bundle includes the Vegas Pro editor, which specialises in support for a wide range of formats, and also the DVD Architect authoring package. Blu-ray support is built into both products – you can burn a Blu-ray disk directly from Vegas Pro – as is surround audio support, with free AC3 encoding. Vegas Pro works with most of the standard hardware controllers, so you're not limited to mouse-only editing. Its main strength is an editing system that owes more to clip-based audio sequencing than some of the legacy deck-based non-linear video editing concepts that still haunt some of the competition. You can edit audio as easily as video, applying cross-fades, inserting FX, and mixing and compositing with equal ease. If you can arrange a single time code source, Vegas can layout multi-camera shots automatically, drastically simplifying editing and scene assembly. There's also support for 32-bit colour with fine control of grading, and some interesting networked and multi-processor rendering features, which can significantly cut down on render times.



So what's new? Aside from the inevitable darker charcoal colour scheme – *so* this-season, but also easier on the eye during long hours in front of a set of monitors – perhaps the most useful new addition is enhanced pan and scan support. You can now load huge gigapixel images, and skate a virtual rostrum camera across them, in best Ken Morse fashion. Also included are a handful of new effects. The lack of development in the effects and transitions section of Vegas has been a constant criticism for the last few updates, and while it's good to see some new additions – specifically Glint, Rays, DeFocus, Starburst, Fill Light, and Soft Contrast – I would have liked to have seen a wider range of options. Even with the changes, Vegas continues to lack some of the more creative effects taken for granted in competing packages. This may not bother you if you're assembling news stories and documentaries, but Vegas might not be an ideal platform for creative motion graphics, animated logos, or impressive 3D titles and lower thirds.

More professionally, Vegas Pro now supports the RED ONE and XDCAM formats directly. RED ONE files can be output and edited up to 4K – as long as your PC can handle the throughput. XDCAM support includes both SD and HD. There's also support for prosumer formats like AVCHD and old-fashioned DV. 24p is included for those formats that support it. Overall, format support remains a Vegas strongpoint. It's not completely universal – don't expect 15-year old RealPlayer files to work – but Vegas can load and edit almost any modern format.

Out Of The Box

Not in the box, but available as an optional extra is a Production Assistant package. This adds a slew of useful features that are missing from the main product, and which professional users may find essential. The list includes generic batch processing of both audio and video for format conversion, grading, white balance presets, filtering and marking, support for lower thirds, motion fly-ins, automatic cross fading, and gap removal. For an extra GB£130 or so, this is likely to be an essential purchase.

Not all the news is good. The DVD Architect authoring package remains a good few steps behind the competition, not least in its transcoding quality, which seems hit and miss compared to the impressive click-and-go results you can get elsewhere. And it would be positive to see more enthusiastic support from vendors of third party plug-ins and effects. Vegas Pro does have a small third party plug-in market, but it's nowhere near the size of that available for Premiere or AfterEffects.

Conclusion

For those who are comfortable with the interface, Vegas Pro remains a fast and efficient editor – arguably more productive for basic clip assembly than any other product on any platform. It's perhaps not the best option for high-end compositing, movie work, or promo production. This is unfortunate, because video is developing rapidly, and the high end is moving towards advanced techniques like motion capture with split screen, and seamless links between rendered 3D and live action. These and other creative effects that are becoming standard in promos and other creative projects, and are light years beyond the barn door transitions and 3D spin-ins that were at the leading edge ten years ago.

Even so, Vegas remains a good choice for mid-level bread-and-butter commercial projects, where speed is more important than creative open-endedness. For existing users, this isn't quite an essential upgrade – unless Santa bought you a RED ONE last Christmas – but it's still worth considering if you need a little extra eye candy. For new buyers, Vegas remains a competitive Windows-based video editor, with particular strengths in speed and workflow. It has some limitations and you should try out the free demo before deciding if it matches your creative needs. But for certain kinds of work, even with the limitations it remains difficult to beat.

INFORMATION

Sony Vegas Pro 9 with DVD Architect: GB£499.95 (exc.VAT)
Upgrade: GB£166 (exc.VAT)
Production Assistant: GB£125 (exc.VAT)

Sony
www.sonycreativesoftware.com

THE REVIEWER

RICHARD WENTK is the owner of Skydancer Media, a digital production company providing sound, image, design and consultancy services to various clients in London and the West Country.

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HARRISON MIXBUS

DAW

SIMON TILLBROOK puts the little-known Harrison mixer interface to the test.

A recent conversation with a colleague working in the US flagged up a somewhat interesting DAW development: Harrison MixBus. The product is a full-featured, standalone DAW with a built-in 'mixing console' that inherits from Harrison's respected large console catalogue. It's foundation is Ardour – an open source DAW that I already had some awareness of. Note though that MixBus is a standalone product in its own right – Ardour is 'inside', if you like.

I was surprised I hadn't heard anything about MixBus, and subsequently found others in the same boat. All knew nothing; all were intrigued – especially when you contemplate a full-featured DAW with an in-the-box, full-on mixer, claimed to incorporate that 'Harrison proprietary sound' for, well, I suggest you resist looking at the price for a little while longer...

For this overview I am going to focus on the Harrison bit. *Audio Media* has covered Ardour, before and it is relatively well known. Mixbus is an Apple-only application (Snow Leopard compatible), and comes with a utility program called Jack, required to establish a hardware connection.

This Core Audio patching utility allows you to connect any compatible interface you like, giving you the widest of possibilities when it comes to hardware choice. A simple window shows any recognised input and output options automatically, and you can select these as required.

The analogue style DSP algorithms utilised with the Harrison Mixbus draw from Harrison's MR and 32 series analogue music consoles and its large format digital consoles – quite a pool of technology to draw on when producing an analogue feel digital summing engine.

The layout of the mixer window includes any audio channel strips that have been created, and there are two audio track options here. You have Normal strips that act like an audio strip in any other DAW and another called Tape. The latter works like recording on a magnetic tape, utilising destructive record and maintaining a single full-length audio file without edits. There are four stereo mixbus strips, and a final stereo output strip. You cannot currently add additional mixbus strips.

Audio Strip

An audio channel strip top to bottom begins with the track name and, when clicked, the ability to reverse the phase of the audio. This is followed by a hardware input selector (based on your jack selected interface) and a track arming button.

Then we have a pre-fader redirect section where you can route output via your hardware, set up sends or insert either AU or compatible plug-ins.

There's a three band EQ (plus high pass filter) with shelving HF and LF, and a parametric mid, and there are four rotary sends to the Mixbus strips. These sends are post fader and pan, and they sit just above an assign to the main outputs, associated main output pan control and fader mute, and solo. ▸

THE REVIEWER

SIMON TILLBROOK is the Principal Music Tutor at Islington Music Workshop in London. The rest of his time is spent as a freelance engineer, mainly in the USA.

Along with the fader and peak meter is a gain reduction meter, sliding threshold, and rotary knob labelled 'speed'. These all relate to the built-in compressor/limiter options: level, compress, and limit. There is a selector button to scroll through them, each with its own characteristic.

Level is an LA2 type subtle style of limiting, Limit is a far more aggressive 1176 style with Compress giving a wider range of control between the two. Next to the automation mode selector, below the fader, is a somewhat inconspicuous dot that, when clicked, reveals a range of controls relating to various aspects of the audio strips' processing.

There are numeric values and fine adjust sliders for all the parameters, along with an input trim level. Here we can fine-tune our settings if need be, and the addition of an input trim control is a rare and welcome sight. We then find a fader group assign button next to a meter mode selector to show either pre/post fader or input levels. Post fader redirects follow with all the options we have seen earlier with the pre fader redirects.

A post fader direct output assign through the jack utility leads to a comments section to complete this rather comprehensive audio channel strip layout.

Mixbus Strip

Each of the four two-channel Mixbus strips feeds into the main output. Top to bottom we have the track name with phase invert above a sidechain input selector. As with audio strips, we have a pre fader redirect section with options as before.

The Mixbus strips have three tone controls with variable characteristics, and these are high shelving, low shelving, and a mid variable bell.

This leads us to one of the interesting features of the Harrison Mixbus summing engine; the tape saturation. A meter indicates how much is being applied to the signal with the Tape Sat rotary control. This introduces some thickening around 200Hz, it seems, with an ever increasing crunching of the audio.

The remainder of the Mixbus strip matches that of the audio strip with fader and related functions, three compressor/limiter options, automation, post fader redirects, direct output, and comments.

The layout and function of the Harrison Mixbus Master channel strip is very much the same as the Mixbus strip with the exception of the main output meters that indicate light automatic limiting being applied at -2dBFS in yellow, and the K-Meter.

There is a significant amount of additional information about the design and background to this meter, and the link can be found on the Harrison website.

Use

I took a couple of mixes that I had put through Pro Tools and simply imported the audio files into Ardour so I could mix through the Harrison Mixbus for comparison.

Simply pulling up the faders for a basic balance illustrated a significant difference instantly. I have read about, and looked at, some digital summing systems that claim an analogue feel and sound, but this is the first time that I could really hear that happening. The analogue algorithms used in the Harrison Mixbus are well modelled on its analogue systems.

The tape saturation function is extremely usable, adding to the already warm rounded sound that you have as your foundation. Subtle use is certainly the way to go under normal use as it can quickly start to crunch your audio to quite an extreme.

The routing flexibility is very good indeed and familiar, with the Jack utility program making the process simple throughout. A delay compensation feature is particularly useful when routing the Harrison Mixbus through external hardware for processing purposes. The system sends a ping through the routing setup then automatically adjusts the audio delay accordingly. This works very well indeed and is a fantastic addition.

Conclusion

As an open source system you can stump up the cash to have someone develop further compatibility with plug-in formats as well as other functions. Harrison itself is continuing to develop, and updates are coming online quickly.

I could easily pick holes in the Harrison Mixbus by saying that plug-in compatibility is limited, and some functions still needs a little smoothing, etc, but when you consider that this system is US$80 in total you can only say that it represents a fantastic bargain. As an additional mixing option in my DAW toolbox, the Harrison Mixbus is something I am already finding indispensable. AM

INFORMATION

US$79.99 (download)

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Avatar

It's more than big. James Cameron's Avatar is almost real. The best sound people in the biz helped make it that way. STROTHER BULLINS reports.

Avatar may be the biggest film in motion picture history – by reputation, in breadth and depth, commercially, financially, and technologically. But never has 'big' felt so warm, so inviting, and so easy to become enthralled in. Within moments, audiences for *Avatar* are no longer in theatre seats; they are flying alongside Jake Sully (actor Sam Worthington) as he barrels through space towards Pandora, the fantastical universe where *Avatar* delivers its kaleidoscopic retelling of primal conflict. War machines from a scorched Earth deliver successful soldiers of fortune in capitalistic pursuit to a collision with the spiritual, natural, and simple lives of the Pandora's Na'vi indigenous humanoid species: foreign characters so beautifully angelic that you want to be one. They're the good guys, and we humans are the bad guys – and *Avatar* is our means of an escape, at least for a few hours.

As such, it's no surprise that director James Cameron is at the helm of such an audio/visual adventure. After all, he brought us *The Terminator, Aliens*, and (talk about big) *Titanic* – each engaging, super successful feature films. But *Avatar* is markedly different; it's still big – as "big" is clearly a Jim Cameron penchant – but its more like a huge, beating heart kind-of big: alive, vital, and simultaneously strange and organic and captivating to see and hear.

Sound Designer, Re-Recording Mixer, and Co-Supervising Sound Editor Christopher Boyes helped make *Avatar* alongside Cameron, as did Co-Supervising Sound Editor Gwendolyn Yates Whittle and Co-Supervising Sound, Sound Designer Addison Teague. So did a lot of other incredibly talented people. Obviously, it's quite the job; as Boyes explains it, to work with Cameron is to understand what he needs, how he needs it, and when he needs it. He's an ambitious perfectionist filmmaker, and we, his audience, are the beneficiaries of his unrelenting focus. As such, Cameron tends to work with the same talent over time that share the same goals and drive (both Boyes and Whittle worked on *Titanic*, for example); knowing his modus operandi and being a world-class talent is generally job one and job two, respectively.

"I have to say that Jim's approach to sound is very similar to my own approach to sound," prefaces Boyes in explaining his work with the Director. "Two of the greatest sounds on the planet, combined and masking each other, can become really nothing that interesting. [In approaching *Avatar*] Jim had said, 'clarity is king.' I knew from the get-go that was his number one focus. I also knew that it felt comfortable within the paradigm that I approach any given mix. Having said that, Jim cut sound effects, dialogue, and music in his own tracks. And when I need to accurately follow Jim's temp, you can not imagine the nuance; if I had missed nuance from his temp and didn't have it in my track, he would catch it instantly and throw up his hands and say, 'stop.' I had to examine his tracks with a figurative microscope. That was a technical and creative challenge, yet one that never tied my hands. It was just a path. Once I got the track to a place where it was capturing what he had developed with his own track, then I knew we shared a place where he and I could start working. Until I did that, he really couldn't work with me. The reason why is that, like many editors, when he was editing the picture while really using the sound to determine how to cut the picture. So if sounds are not completely following that same pattern, it screws up picture cut. For that reason, there's no room for fluctuation with him. We really have to follow the established path, and that approach works with mine."

***Avatar* sound department group photo, at dubbing stage at Fox in LA: Standing (L-R) are Ryan Cole, Addison Teague, Michael Bauer, Gwen Whittle, James Horner, Shannon Mills, Stuart McCowan, Tom Lalley, Dick Bernstein, Frank Clary. Seated (L-R) are Andy Nelson, Gary Summers, James Cameron, Chris Boyes. Not Pictured: Juan Peralta**

A Massive Undertaking

But Boyes' *Avatar* story actually starts years ago, when first approached by Cameron to work on the film, when his initial work – as Sound Designer – truly began. "I got the call in 2006 that Jim was interested in me designing and mixing the film for him," explains Boyes. "I went down and read the script in summer of '06, then started in earnest around Christmas of the same year. *Avatar* presented itself as one of the most massive things I've ever taken on. Typically in a film, you're looking at a family of sounds: things that live together within a related group. *Avatar* presented itself as a film with multiple families of sounds. For a Sound Designer, it's always a daunting task to come up with all kinds of different sounds. Here, you have dinosaur-like creatures, a world I'm familiar with [Boyes is a *Jurassic Park* vet], but more – a bioluminescent rainforest for the Na'vi tribe; a computerised, high-tech world for the humans; and all sorts of military aircraft. So it felt like the size and scope of the film was more like three films, all in one, regarding the task at hand. It was one of those things where you read the script, and say, 'Oh, Lordy. Can I pull this off? It's so massive.'"

So, as a Sound Designer, what's the first thing to do? As usual, Boyes made lists of what he wanted to record. "I start laying building blocks for new sounds I want to create, too," he explains. "One of the great things at Skywalker Sound [Boyes' working home] is that we have a sound

library second to none; we have an absolute cornucopia of sounds to draw from. But even so, it's not everything: it's the new material, the new elements, and the new sounds that you've never heard before that, to me at least, are most always the vehicles of the creative process. Hearing new sounds gives me ideas that I would otherwise never have."

As creative as Boyes is, Cameron's provided script gave the task of sound design a great jumping off point. "It was very good at defining the world that was going to have to be developed," says Boyes of the script. "Each creature had its unique characteristics. For instance, the viper wolves, which we meet early on in the film, when Jake has accidentally become stranded out in the wilds of Pandora – these creatures, a cross between a vicious canine and an agile panther, almost demonic in their ability to communicate and hunt together – had this communication path. Jim described them in the script quite well, having 'hyena laughs,' with 'hissing, snarling growls' that communicated like a pack of wolves would. I guess that's what it comes down to: creating a language for each animal; not a cry, but a range of sounds to convey emotions and the intelligence of the creatures."

Luckily, Boyes has a crack sound team that assists him in his far-flung pursuits of gathering exactly the right sounds for the script. "I don't get to go out in the field as much as I used to," he says with the slightest hint of regret in his voice. "So it came down to tapping a soild Editor/Designer Addison Teague and my assistant, Dee Selby, to record every creature they could get his hands on: raptors, dogs, hyenas, you name it. One rich source of sounds was at a hyena research center at UC Berkeley. He also went to wildlife refuge center to record baby raccoon trills. Oddly enough, for the banshees, I recorded babies of all sorts. Oftentimes I find that when you hear newborn creatures, they make sounds that are so unfamiliar; we rarely hear those sounds. Literally, we recorded baby swine that were days old."

For Boyes, "first things first" means "complicated things first." "The creature things were really the big challenge to have recorded right off the bat," he offers. "I approach any film like this: wanting to do the most complicated things, right now. Addison Teague, an absolute hero to me, has been working with me for years now. He moved from northern California to LA so he could work full-time in the picture department of *Avatar*. Addison recorded everything from the roots of a fallen tree to Coyotes hunting in his back yard for months on end. He also did some jungle recording."

Once new sounds were captured, Boyes was on a mission, anywhere and everywhere. "If you get really good recordings, you're suddenly manipulating tropical sounds in interesting ways," he says. "On my laptop, I would literally bring a collection of sounds with me anywhere I would go. If I didn't know what to do with myself, I would just make jungle sounds because it was so much fun."

Of Languages And Lexicon

There's no denying that Boyes has a lot going on within any given sound department of most major projects he is involved in these days, and *Avatar* is no exception. However, that doesn't mean that he wears all those hats at the same time. "When I become the mixer, I take one hat off, toss it, and become something else," he states firmly. "More and more people are doing both {designing/editing and mixing], but it wasn't always common. It's a bit of a lineage that developed at Skywalker when Ben Burtt started out. It was certainly not the path that anyone would follow elsewhere in the industry, specifically Los Angeles. Yet it is my lexicon; it is the way that I can do the best job on a film. I've always said that it is easier for me to dump a sound that I've made if it's not working – I'm absolutely brutal to my own sounds. When I am mixing, I am looking for a language to develop itself, that becomes one with the image and story, developing along with it. No other idiom can take place."

Speaking of developing languages, Whittle found the capture of the fictional (yet detailed) Na'vi language a unique example of a common theme throughout *Avatar* production: unprecedented attention to detail. "The coolest thing about the film dialogue-wise is the made-up language," she offers. "You'd think that no one would call you on it as no one speaks it or knows it. I thought that it would be simple as far as recreating it for the loop group or the people speaking it. No. It's a made-up language, but it has a dictionary, a vocabulary, syntax, and we were very, very specific about that stuff. The main character, Sam Worthington's Jake Sully – because he's not a native Na'vi speaker – they were more forgiving with Sam on his Na'vi. However, with the other actors, they were real sticklers about the pronunciation. We had loop groupers on the set that learned Na'vi, as well. The fighters/villagers became loop groupers, helping the professional loop groupers learn to speak the language. That was actually really fun. The person that made up the language, Paul Frommer [a USC professor] would come up with the words based on what was needed to be said; he would send over an MP3 of him saying those words so the actors could learn to speak the words. I now have my own personal library of how to speak Na'vi!"

A Favourite Experience

As Boyes explains, "There's almost always a bit of tension between the effects and music departments. As you can imagine, music builds this incredibly complex track of music. In their minds, there's really no need for sound effects at all. Then here we come, the noise makers to pollute their music!"

However, this was not the case on the mix stage for *Avatar*. "I have to say that this is one of my most favourite experiences working with a Composer and a music department," states Boyes. "Mixing, it was Gary Summers, Andy Nelson, and myself. Andy and I had a great time; I found him to be incredibly collaborative, to have great ideas, and to listen to my needs as well. One thing that was a lot of fun in that regard, for reel 9 – the second to last reel in the film – James Horner, the composer, was with us for every day. He loved our sound effects, which was such a wonderful experience for me. Here's a composer, one of the greatest composers on the planet, having a great time with our sound effects." AM

James Cameron – **Director**

Christopher Boyes – **Sound Designer, Re-Recording Mixer, and Co-Supervising Sound Editor**

Gwendolyn Yates Whittle – **Co-Supervising Sound Editor**
Addison Teague – **Co-Supervising Sound Editor**
Gary Summers – **Sound Re-Recording Mixer**
Andy Nelson – **Sound Re-Recording Mixer**
Juan Peralta – **Sound Re-Recording Mixer**
James Homer – **Composer**

Sound Devices

552

The 442 is dead, but what does its replacement the 552 offer in its stead? SIMON BISHOP tries out the mixer and finds it has a few tricks up its carbon fibre sleeve.

I started this review trying to think of a quote, and the one that came to mind was 'Be careful what you ask for, because you just might get it.' For some years now the Holy Grail of factuality recordists has been the desire for 'an SQN that can record'. When connected to the back of the camera, the dreaded curly cable can often be the bane of one's working life, and I regularly seem to find myself talking with colleagues and pals about ways in which we can get rid of it. At best it is cumbersome and needs a certain amount of 'management', whilst at worst it can be a health and safety hazard – or worse still, it can be unplugged, and the audio you so lovingly crafted is lost (and probably your client). At the point where you find a way to dispense with the cable, a way must be found to reliably record or back up the audio that belongs to the pictures. I have always felt uneasy about sending primary audio to a camera by radio waves. My biggest issue is that you can't see them, and that with almost any radio link there is no way that the recordist can be 100% sure that said audio is arriving and being recorded safely. I am a great believer in making a back-up recording at the point where the sound is originating, i.e., as close to the mixer as possible.

Building On A Legacy

Sound Devices, based in Reedsburg, Wisconsin, USA, burst onto the audio scene about 11 years ago, with a number of well built, neat, and in some cases very nifty audio offerings. The 442 mixer, introduced in 2001, has become pretty much the standard portable audio mixer for factuality work, and has been giving the trusty, UK built, SQN mixer a pretty decent run for its money for most of those eight years. I worked with a 442 for years, until I found and bought a machine that would mix and record onboard, yet still send primary audio to the camera. I found my 442 to be tough, reliable, and flexible, whilst offering terrific audio quality.

In my experience, Sound Devices products are built incredibly well, are both rock solid and innovative, and sound fantastic. Amongst a whole line of excellent products, there are a few that are particularly outstanding – these include the 302 and 442 mixers, and more recently the 7 series recorders (two, four, and eight-track). From this we see that Sound devices has a raft of experience in both analogue and digital audio systems – thus, the 552 is a logical 'next product' for the company.

Tiny In A Big Box

On opening the reassuringly large box in which the 552 was delivered, I immediately noticed a few things. It is diminutive in size – in fact, it is the same size as the 442, and yet packs five mic/line selectable inputs, five direct line outputs, two analogue/AES selectable outputs, plus numerous other analogue outs and returns, not forgetting the onboard two-channel digital recorder. The case is not made from metal but from carbon fibre, which feels good and strong, and yet is light at 1.8kg (0.2kg less than the 442). As I am reviewing this mixer during the UK's coldest weather in years, I should mention that the carbon fibre feels warm to touch, even after a good few hours in the back of my freezing van.

I should, at this point, run through the various panels, and where to find what. The LH side panel offers us five input sockets (XLR3F) and five corresponding mini LR3M direct output sockets. There are no switches on this panel, since mic/line selection, phantom powering, and phase are all dealt with using SVEN, a voice prompted menu system, which 'speaks' menu selections into your headphones. I will return to SVEN later, as it is an interesting way of working through menu items where there is no screen to look at.

The RH side panel offers us all other inputs and outputs, and there are loads of them. There is a combined output and return pair on a 10-pin Hirose connector, plus a pair each of full sized and mini XLR3M outs. There are unbalanced 3.5mm mini jack outs (a stereo and a mono mix), plus stereo output on a mini XL3M. There is a B return on either 3.5mm mini jack or mini XLR3M. The socket that serves as a B return on mini XLR3M can be used as a timecode input socket for ▸

THE REVIEWER

SIMON BISHOP is an experienced film/TV location recordist with a string of notable credits to his name.

the onboard recorder. Suffice to say that there is an abundance of connectivity on this panel, the clever bits being that the outputs to Hirose and XLR3M can be switched to line at +4 or -10, or mic level, plus they can be set in software to become AES outputs, so a pair of channels can be sent to each. If you can't find a way to get something into, or out of, a 552 mixer then you really are in trouble.

The rear (bottom) panel gives us a slot for an SD, or SDHC memory card for the audio files, and a mini USB socket for engineering use.

It should be noted that there are only four hardware switches on the whole 552, other than on the front panel – which means that once plugged in and with output socket levels set, there should be next to no reason to be involved with the side panels whilst shooting – just about everything can be done from the front panel or using SVEN.

This leaves the front panel – where almost everything of an operational nature occurs. Sound Devices has utilised an ingenious system whereby the use of a couple of common switches and buttons, plus the channel specific solo switch allows the user to operate input level selection, phantom power, and phase. Each IP channel has the familiar SD arrangement of master gain, bass cut, and pan knobs (all of which recess when not in use), a PFL switch, and the channel fader pot. There is 15dB of gain on the channel fader pot, which can be a very useful bit of 'extra' when struggling with some sources.

The SVEN Way

The headphone level knob can also be pushed in combination with the battery status/menu button to enter the world of SVEN. SVEN is an acronym for Synthetic Voice for Enhanced Navigation. I will refer to SVEN as he, as it is clearly a male voice that announces which menu you are in, or what value or choice you have taken. You access SVEN by pushing the battery status/menu button plus the headphone level knob. You then turn the same knob to choose a menu item. When you stop turning the knob (which has many, small, stepped positions) SVEN tells you which menu you are now in. He has a voice that is quite clearly synthesised, and sounds like he might have a bit of a cold, so I found some announcements needed a few auditions.

Suffice to say that in the absence of a screen, SVEN is a huge improvement on the previous SD menu system that involved turning on the mixer in 'menu' mode, then using the meter LED lights to indicate different functions and values. The advantage of working with SVEN is that it is no longer essential to have a crib sheet with you in order to change a function. SVEN announces function headings like 'tone level', 'phantom voltage', or 'remove from mix'. It takes less than five minutes to learn 'the SVEN way', and once learned, it is easy and swift to operate. The shortcuts that operate functions like mic/line level switching, phantom power, and phase, are also very swift and easy to grasp, making the whole mixer part of the package easy to learn, operate, and use. The 552 sounds superb, and I wouldn't have expected anything but from SD.

The recorder is a bit of a marvel of miniaturisation and simplification. To say that its physical impact on the whole package is minimal is an understatement. It basically consists of a tiny joystick, an LED, and that's it. Much as Sound Devices has reduced the amount of mixer controls to a minimum, whilst still retaining full functionality, it has done a similar job on the recorder aspect of the 552. The joystick works for up, down, left, right, and push instructions, which correspond to record, playback, rewind, fast forward, and pause/stop. 'Shifted' functions can be reached by pressing the battery check button and then using the joystick, this then allows you to load the previous or next day's folder, or to

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PB to the L+R outs in addition to the 'normal' PB mode through the headphones only. A colour changing LED indicates the recorder's status,

Route To Source

The source for the recorder follows whatever is routed to AES bus A. The source for AES bus A (and in fact AES B, if you are using the XLR or 10-pin Hirose OPs as AES sends) can be assigned in SVEN. Various combinations other than the L & R mix can be chosen, and include various pairs of channels (pre or post fade), or a single channel plus a mono mix of the L+R outs.

The recorder can record files as .WAVs (at 44.1/48/88.2/96 kHz), or as MP3s (at 64/128/192/320 kb/sec). There is a timecode input, and a blue LED indicator on the front panel to say that there is TC present. The 552 does not have an internal TC generator, so to record sync files with TC stamps, an external TC source needs to be used (see Ambient LANC Lockit box, tiny, and cheap). The 552 makes a new folder for each day (there is an internal clock that can be set within SVEN) and names files using the date plus a three digit file number, so a file from Jan 10, 2010, might be named 10Y01M09-001.WAV (9th of Jan, 2010, first file, and its a WAV). This file would be found on the card in a folder named 10Y01M09, so its pretty simple and clear to find whatever you are looking for. WAV files include a host of BEXT and iXML information in the file header.

Tripping Up

I couldn't help but think that there are just a couple of potential ways to trip the 552 recorder up. The cover over the SD card is rubber and it was quite easy to push the rubber cover with my finger, and spring the card out. If I was working with a 552 I would certainly make a little solid something to flap/stick over the bottom of the machine, to prevent this happening. It is also quite easy to 'accidentally' push the joystick around – in a bag, with a load of stuff plonked on top of the kit (artists just handed me back three radio mics whilst I am doing something else – it can happen). It could be that the recorder might accidentally go into record this way. If you're not alert, then a very long segment could be recorded unwittingly. That said, I really am impressed at the way that SD has included the recorder, and yet made its impact so minimal on the whole package.

Bearing in mind that there is no USB or FW socket available to access the audio files, it is a real shame that the SD socket is on the back of the machine. The thing here is that one has to remove the card to get at the audio files. This is clearly a consequence of the miniaturisation, but could be a drag on a big job. I guess that keeping a number of cards, so that a mere swap would mostly deal with rushes removal could ease the issue, but it would have been nice to be able to plug a lead between 552 and laptop, and offload the rushes directly from it.

Conclusion

So – after all of this – how is the 552 to use? It is small, and compact, and yet all the useful controls are in sensible places, with indicators for everything that you might want an indication of. It is easy and swift to learn, flexible, and has a few more tricks that I don't have room to go into here. It feels really tough and strong, and were it not a demo unit I would happily stand on it! During my time with the demo machine, Sound Devices released a software update, which I downloaded and installed. The installation was simple, swift (probably less than two minutes), and faultless in every respect.

In conclusion, the 552 is a pretty impressive advance in many aspects. It packs a whole lot more into the same sized case as the 442 (think SQN4) which it supersedes, plus it includes that all too important recorder that we have always asked for. The 442 is no more, and is replaced by the 552 – now I can't help thinking of another quote – 'The King is dead. Long live the King.'

INFORMATION

£ GB£2,500.00 (exc.VAT)

Ⓐ Sound Devices LLC, 300 Wengel Drive, PO Box 576, Reedsburgh, Wisconsin 53959, USA
Ⓣ +1 (608) 524 0625
Ⓕ +1 (608) 524 0655
Ⓦ www.sounddevices.com

Ⓐ UK Distributor: Shure Distribution UK, Unit 2, The IO Centre, Lea Road, Waltham Abbey, EN9 1AS
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Production Sound Expo

On-the-Spot Recording

STEPHEN BENNETT talks to sound recordists Simon Hayes and Chris Munro about the art of location sound recording and its development over the years.

Watching *Singin' in the Rain* over the festive period brought home once again the prime importance of the audio side of the movie and TV business. While most of us parked on the sofa are singing along with Gene Kelly, I'm geeking over the microphone placement gags (just where do you put a microphone the size of a plant? Behind a plant!) and being fascinated by the early technology used in sound to film recording. Things have come a long way since then, especially in the last twenty years, where a technological revolution has occurred in the location recording (ahem) 'field'. Of course capturing dialogue on set still poses unique problems to a recording engineer. How do you record twenty people talking in a room so that each individual's dialogue can be heard? How do you capture on-set sound when the set is moving at speed or is up a mountain or in a swamp? Directors spend a large amount of time coaxing 'performances' out of the talent and if the sound recordist can't capture this in a fashion acceptable to the post production engineers, ADR will be required – which will always lose the emotional impact of a scene. While technology can assist in making sure the Director gets crisp, clear dialogue free of noise, it can only go so far. What's needed is an experienced and talented sound recording engineer who can put the technology to use.

> "While technology can assist in making sure the Director gets crisp, clear dialogue free of noise, it can only go so far. What's needed is an experienced and talented sound recording engineer who can put the technology to use."

Expert Witness

One such man is Simon Hayes, winner of the Conch Award for Best Production Sound Mixer in 2008. "I started in the film business at 16 as a runner and decided, at 18, that I wanted to go into the sound department." He says. "I became a sound assistant and then a boom operator, and worked on the Comic Strip Presents series for Channel 4 (amongst other things) and I also did a lot of commercials. I'd always wanted to get into drama, so I did short films for anyone who wanted me to – I jumped at the chance to work with any young directors who wanted me to give up a few days or a weekend. I knew that sooner or later, one of those guys would become a feature film director. One day I met a young runner on a commercial and we got talking – he was about my age and I recognised him as a kid that I'd known from growing up in the same part of London. He said he wanted to be a Director – I told him that it would be very difficult to move from running to directing and that he should set his sights a little lower and try and 'climb up the ladder'. But he was very persistent and in about six months time he called me and said he had a short film that the was going to shoot in Soho over the weekend and was I interested?" The film was called *The Hard Case,* and the newbie Director was Guy Ritchie. Hayes went on to work on his massively successful debut film, Lock, Stock and Two Smoking Barrels.

Simon Hayes.

Chris Munro has worked on five *James Bond* films, and was BAFTA nominated for *Quantum of Solace* and grabbed the gong for *Casino Royale* in 2007. He was also nominated for best sound for Paul Greengrass's *United 93*, received an Academy Award nomination for *The Mummy*, and was awarded an Oscar for his work on *Black Hawk Down*. "I started in the industry straight from school as a trainee sound maintenance engineer and was fortunate to have been trained both in the studio and day release at college," says Munro. "Having a technical background has been very important in my career and has allowed me not only to adapt easily to new technology but also to pioneer new ideas. When I first became interested in digital recording I experimented using prosumer DAT until the launch of the Fostex D20, which was the first DAT machine to have reliable timecode capability. Since then I have worked closely with Fostex helping to develop all of their professional recorders including PD2, PD4, and then the DV40 through to the DV824, PD6 and PD606, and PD204 file-based recorders."

Anti-ADR

Both recordists are keen to deliver location dialogue that requires little or no ADR trickerypokery in Post. "Many of the directors that I work with insist on using original sound and, no matter how good the ADR can be, will always recognise that this is not the performance that they worked hard on set to coax from the actor," says Munro. "Of course, there are occasions when, for whatever reason, it is impossible to get usable dialogue. In these situations I usually try to do some location looping by getting Quicktime files from editorial to ▸

use with my portable Pro Tools system for ADR. These can often be useful, as they can be recorded when the scene is still fresh in the actor's mind and not at some point months later, when they may be playing a different character or another project. Probably the best success that I have had with this system was on *The Kite Runner* (directed by Marc Forster), where the two young Afghan boys in the lead roles could not go to the UK or USA for ADR, so we had to record them in a hotel room in China. The Director, who always hates ADR, was so happy with the result that he asked to use it again on his next film, *Quantum of Solace*.

In Hayes's case, it was the original dubbing editor on *Lock, Stock…* who passed on some sage advice. "I didn't want one single word of dialogue to be ADR'd," he says. "Before the production began, I called the dubbing mixer as I wanted to talk to him about the post production specifications and exactly what I was going to do. I was recording mainly on booms and was thinking of capturing some of the scenes in stereo on my lovely Neumann RSM191 microphone. The dubbing engineer cut me short and said, 'Stop! Let me tell you what your job is and what I need from you. Any time you are thinking of getting a stereo mic out and doing a stereo atmos or a stereo pass of a car, don't – I can do all that afterwards. Do it all in mono. Spend the time getting rid of the footsteps and doorslams and other extraneous noise so it doesn't interfere with the dialogue. All I want from you is dialogue as close and as clean and as free of background noise as possible.' And that was the ethos I went into the film with. 37 films later and that is still my main goal. I wish I could remember his name as he shaped my entire career!"

On *Lock, Stock…* Hayes exclusively used Schoeps microphones indoors and Sennheiser MK870s outdoors on booms. "There wasn't one bit of dialogue that had a radio mic and not one single word of ADR on a movie that was shot on location in the east end of London," he says, proudly. These days he still uses Schoeps CMC55's on interiors and Sennheiser MKH 70 shotguns outdoors. "The major development for me regarding microphones on radio mics has been the addition of DPAs. These are practically twice as expensive as any other Lavalier, but it's a no brainer for me; because they sound three times as good!" he enthuses

Until comparatively recently, most location recording was done on up to two tracks via Nagra Tape machines or DAT. But with the advent of multi-track hard disk recorders, the need for instant decisions on microphone placement in a scene is much reduced. Now the engineer can site microphones on all the actors and the Director can choose the most suitable recording in post. In Hayes's case, the Zaxcom Deva (www.zaxcom.com/), a 10- (now 16-) track hard disk-based recorder, has become the centerpiece of his kit. "Multi-track machines meant that I didn't have to make the same kinds of decisions as I used to have to do when working with two tracks," says Hayes. "Now I have 10 tracks, I can record fantastic boom and radio mic tracks, and the dubbing editor and Director would be able to make a choice as to what they felt was the best audio was for the scene in the context for the movie." Though technology has increased the choices available in post production, Hayes still gives them the benefit of his experience as a guide. "Tracks one and two are still my 'preferred' boom tracks – the ones I would have given a dub editor if I was working with two tracks only," he says. "But the other isolator tracks also get loaded into Avid and can be used if someone's dialogue could be a bit meatier."

"The Production Sound Mixer's role has changed a lot over recent years," adds Munro. "In some ways, it appears to have become a little easier – until you consider the increase in the Director's expectations. When I first started mixing it was to a single track on a mono Nagra and then you had to make decisions and mix live 'on the fly' We now mix to multi-tracks where, though we still need to mix to one track for editing purposes, we have the comfort of knowing that all the components of that mix are recorded on ISO-tracks and can be re-mixed if necessary. But we are now expected to record a lot more sound. For example, I usually try to record all of the off camera lines as these can be incredibly useful in post when searching for that odd line that didn't work in the selected take. I will also try to record background ambience on a track that is clean of dialogue so that if there is a particular noise on the master, for example, that sound can be continued in the edit over any close ups or cover shots. This again can save a lot of unnecessary ADR. It is also common to now shoot with multiple cameras that are not necessarily covering exactly the same action, so we may have to record a different mix for the other camera. We have to monitor and manage eight, 10, or 12 times the number of tracks that we used to work with, and this has made a big impact on the crew and equipment requirements. I'm really not sure that many producers realise this, or how employing a good sound mixer and giving him the ability to hire the best crew and equipment can not only save a significant amount of money in post but also create a better film."

Chris Munro in studio.

Chris Munro in icy conditions.

Munro's current weapon of choice is the Fostex PD606 (www.fostexinternational.com) DVD/HD location recorder, an eight-track machine which he found particularly reliable while shooting M. Night Shyamalan's *The Last Airbender* for Paramount Pictures. In a 'Scott of the Antarctic' type dispatch he reported; 'I just wanted to let you know how well the PD606 is working in Greenland. Temperatures have been around -20 degrees C (-4 Fahrenheit) and lower – the biggest problem was trying to operate the pots with gloves!'

Direct Input

Though readers of *Audio Media* will understand the importance of the smallest element of the location recording crew, Directors are not always so clued in. "I have some concerns about how the various roles of sound crew members are generally perceived in the UK," says Munro. "It doesn't matter how good you are as a production mixer, your tracks can never be any better than the quality of the sound captured by the boom. On one particular production I remember being asked by production why the boom op needed a script! When I told them it was so that he knew who to point the mic at, they were amazed!"

To those of us sitting in air conditioned post production suites with hot and cold running Pro Tools, the location recordists role could be seen as just another cog in the audio chain. But these guys are at the rock face of the movie-making process – sometimes literally. And though technology has helped to capture that 'perfect take', it's no replacement for the years of experience the best crews will bring to the job. AM

INFORMATION

Simon Hayes: www.simon-hayes.com
Chris Munro: www.imdb.com/name/nm0613101/

JoeCo BlackBox

Ben Burns tests the revolution in computer-free recording, JoeCo's standalone portable-disc recorder.

Joe Bull is no stranger to high end audio systems; SADiE was his baby and now he's out there doing his own thing with JoeCo Ltd. Launched to the cry of "Why didn't I think of that?", and several awards for innovation, the BlackBox recorder is an exciting product for anyone interested in capturing a multi-track recording of a performance – without the use of a computer. Each BlackBox recorder fits into 1U of rack space, runs off DC voltage from 7.5v to 15v, and uses a USB2 disc as storage medium to record 24 broadcast wave files at at up to 24-bit 96kHz. After recording a show the disc can be removed and connected to any DAW directly, eliminating the need for file transfers. There are four I/O options to choose from – Joe sent me the BBR1 with unbalanced insert looms to try out.

Impressions

As much as function is the priority for most professionals, it is always nice when something looks great too. You can't deny the striking features of this BlackBox – the sleek lines of the front panel are not interrupted by any hardware switches, all the controls are touch sensitive and colourfully lit. You can't help but notice an iPod style data wheel, which is used to navigate menus and set mix levels – it's a rather neat solution for the control interface and works intuitively.

> "You can't deny the striking features of this BlackBox – the sleek lines of the front panel are not interrupted by any hardware switches, all the controls are touch sensitive and colourfully lit."

The layout is logical and very easy to grasp without the manual. Metering and track arming are displayed on LED meters to the left side, whilst the touch sensitive controls and colour LCD screen are to the right. The 'buttons' are logically colour-coded, and either flash or remain lit depending on the current state.

The colour screen contains all the information you need at a glance. The current song name, transport state, elapsed time, and remaining time are all clearly displayed. At the bottom of the screen, in a smaller font, are things like the current sample rate, time (either internal clock, or external timecode), current song folder, filename, and the disk buffer size. A rather comforting 'OK' lets you know everything is going to be alright, and the same area will display any error messages (such as when you unplug something).

The unit is well built and weighs in at a little over 2kg. With cables connected at the rear, the total depth you need is about 25cm. Rack ears can be removed for an even more compact setup that will easily stash in a laptop bag. The rear connection panel is quite densely populated due to the small size of the BBR, but the various connectors are laid out within logical groups.

Audio I/O

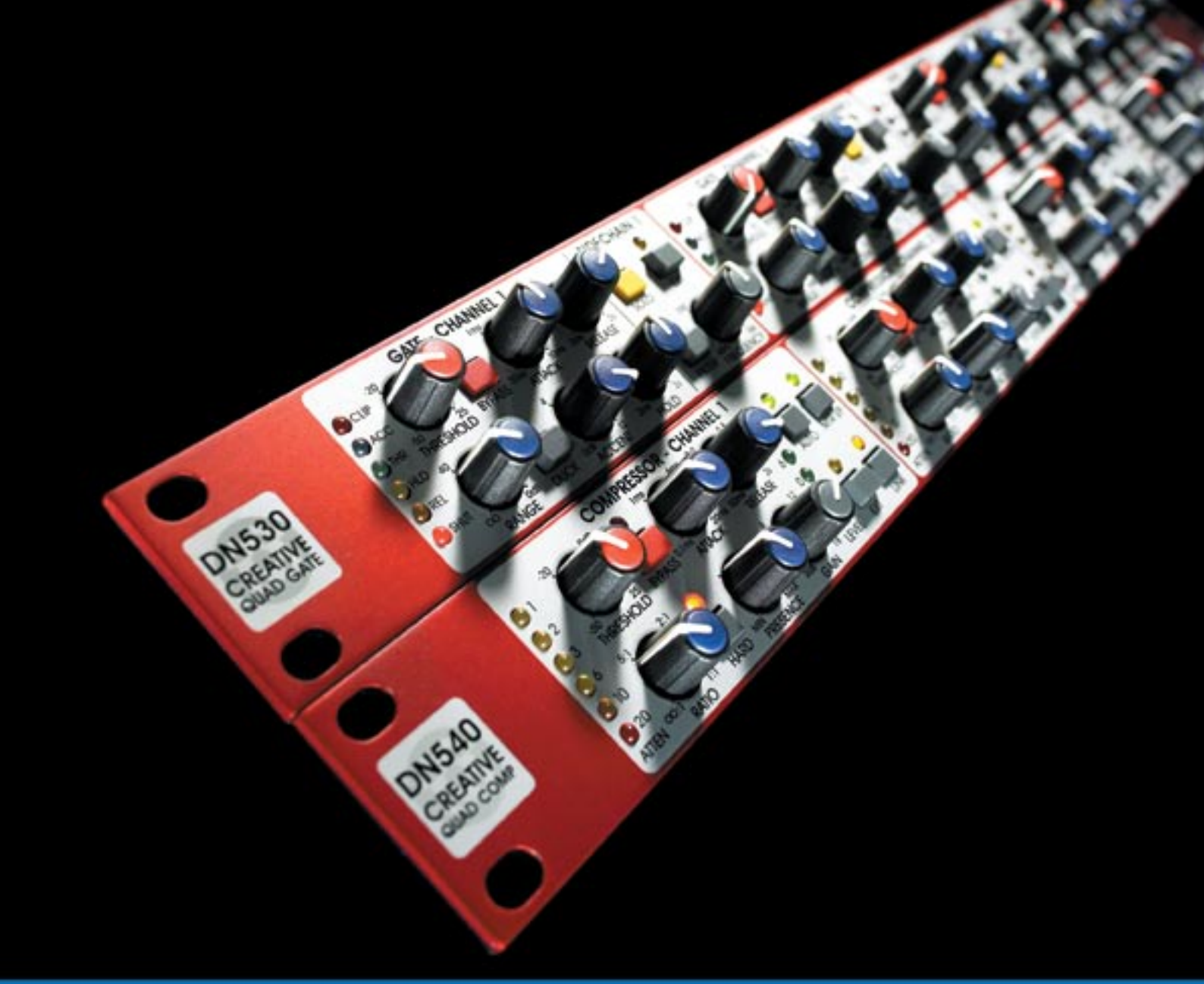
There are currently four models of BlackBox to choose from, depending on your I/O requirements. The analogue models all use Tascam standard 25-pin D-SUB connectors allowing a variety of looms to be used. The menu allows consumer -10dBu level or professional +4dBu to be selected for all analogue I/Os as a global setting. There are analogue relays on the I/O connectors to ensure that there is no risk of losing audio through the console if the power fails.

BBR1 is the review model, and has been designed to connect to an analogue console via unbalanced insert points – enabling a 'virtual sound check' mode for polishing. As well as running from insert points, an unbalanced signal can be derived from direct or group outputs. There are eight parallel insert sockets on the BlackBox that allow you to insert compressors, gates, etc, on channels 17-24 only. This feature is disabled on the other models.

BBR1B is the balanced version, which adds three more ▸

THE REVIEWER

BEN BURNS is a London-based freelance engineer- both live and studio- with credits including Blur, Dido, Embrace, Happy Mondays, and more.



The Creative Series: DN530 Quad Gate and DN540 Quad Comp

With the unrelenting absorption of signal processing into digital mixing consoles, outboard gear now has to contribute something extra special merely to justify its space in the rack. The new Creative series from Klark Teknik does just that. It brings some exciting new tools to the audio party. And with four channels of processing compressed into just 1U, unlocking your creative potential doesn't mean unlocking another rack.

Transient Accenting

DN530 Creative Quad Gate

The key to silent gating is the shape of the gain transition curve that is used to ramp up the signal level when the gate opens (attack) and fade it back down when the gate closes (release). The DN530 features a carefully mapped logarithmic attack envelope, to ensure fast, silent gating.

The DN530 Quad Gate also boasts "Transient Accenting", a new creative feature providing an easy way to enhance the attack envelope beyond merely opening the gate. This can provide up to 12dB of additional transient energy. Its primary application is to provide additional impact on drums and percussion instruments, although it can be used to enhance the impact of many instruments, including acoustic stringed instruments such as guitar and piano. Transient Accenting is unique in that it allows the operator precise control over the amount of enhancement applied to each channel of processing, and can be applied independently of the gating function.

Dynamic Enhancement

DN540 Creative Quad Compressor

Throughout the history of dynamics processing many different types of compressor have been produced using many different types of gain technology. Each type has a distinctive sound. Users have found many applications which benefit from these often unintentional compression audio artefacts, taking the use of compressors far beyond simple dynamic range reduction, sometimes even generating the complete reverse; dynamic enhancement.

It is with these creative applications in mind, that the DN540 Quad Compressor features a unique "Harmonic Enhancement" presence control. When this is engaged, the harmonic content of the material is preserved in a more natural and dynamic state, in a spectral area where we are most perceptive to detail. This allows more compression to be applied, providing greater control of programme dynamics, without the source material sounding dull, lacking in detail and unnatural. Dynamically enhanced compression can produce results that are very similar to multiband compression but with only one additional control required (as opposed to many) it is considerably less time consuming to set up and typically does not require constant tweaking during a performance.

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D-SUB connectors to the unit to make three in and three out. Again, using the Tascam standard ensures compatibility with existing systems.

BBR1D is a digital AES/EBU version, using three D-SUB connectors which are are selectable between the TASCAM and YAMAHA standard pin outs. The digital version also includes the standard three unbalanced analogue D-SUB connectors as well, so there is a backup should anything weird happen to the AES data stream.

BBR1A is the ADAT version, using six light-pipe connectors. Most gear runs up to 48KHz sample rate at 24-bit resolution. It is possible to record at 96KHz if your gear supports that, but you'll only get 12 channels in and out of the BlackBox. If you ask nicely, Joeco will build you a special unit with six ADAT inputs and six ADAT outputs, enabling all 24 channels to be recorded at 24-bit/96KHz. This ADAT version also includes the standard unbalanced analogue I/O as a fall back just in case.

If you have a digital desk and want to multi-track a tour, it may be worth investigating all the options available as current digital options for the BlackBox are ADAT or AES.

Currently, there is no MADI option, although JoeCo. is looking into this and its related issues. TDIF is not really widespread in the live industry, and will not be supported.

Other I/O

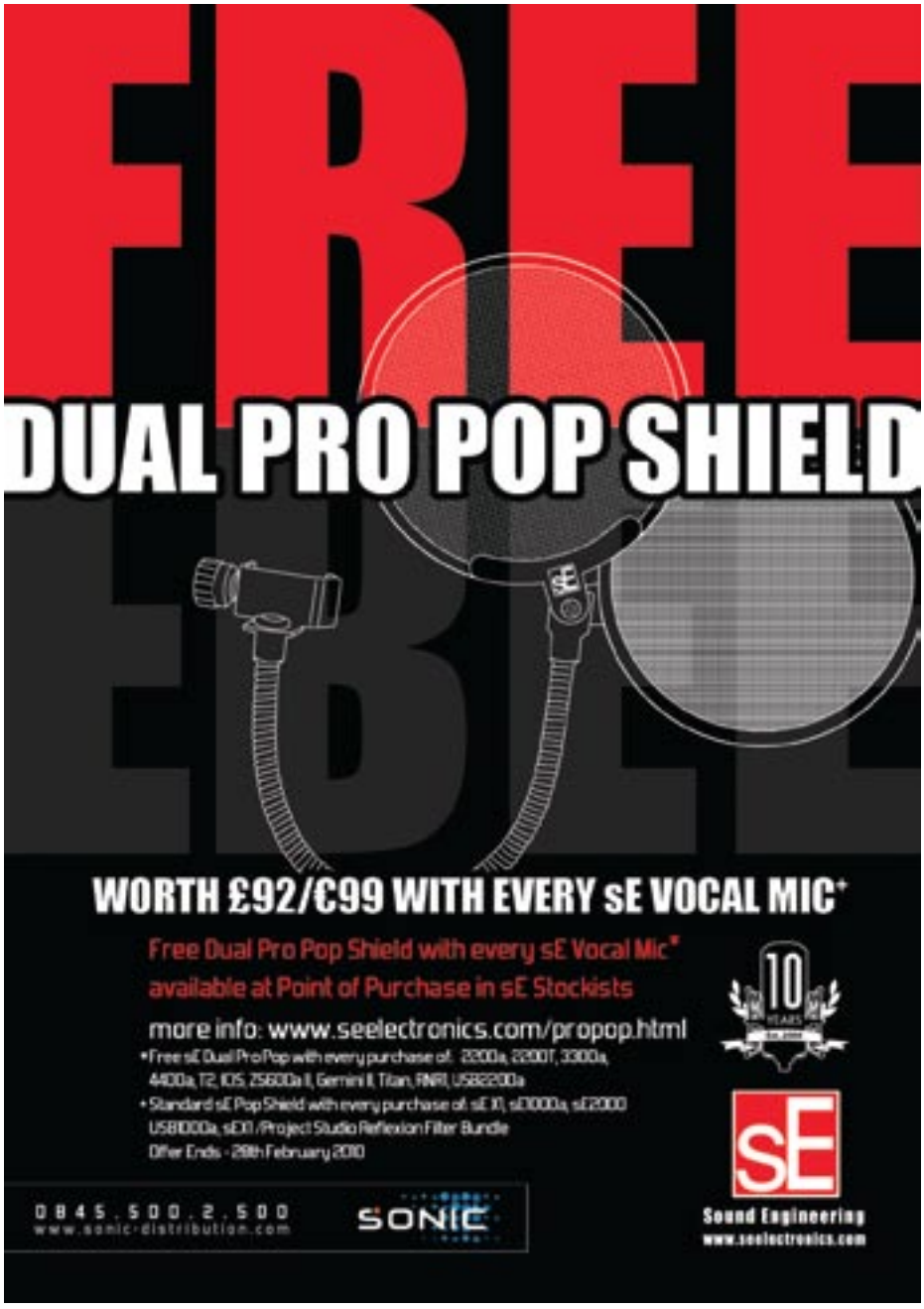
You can control the BlackBox by remote using either MIDI machine control (MMC) or Sony 9-pin. There is one MIDI in connector and one 9-pin connector, and both these methods support track arming/disarming and transport control.

There is a jack input with two functions – it can accept a footswitch to start recording and add track marks, and also accepts linear timecode. If you are working to timecode, then the BlackBox can slave to (but not generate) Linear Timecode (SMPTE) or Midi Time Code (MTC).

Word clock in and out is provided on an RCA jack – to be used with other BlackBox units when slaving up to four units together.

Standard quarter-inch headphones can be plugged into the headphone socket. Personally I would rather have this on the front panel, but JoeCo imagines this unit to be racked up with extension cables for the headphones.

Finally, a USB2 port is provided for connection to the hard drive.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> "When you first power up the unit, so long as a drive is powered and connected, it's ready to record in under 10 seconds – my specific setup was recording audio eight seconds after the power came on, pretty impressive."

Data and Drives

BlackBox can use any fast (7200rpm) FAT32 formatted disc for a system that is truly plug and play with both Mac- or PC-based DAW systems. I managed to format a 1TB drive as one partition easily using Apple's disk manager in OSX. Most drive manufacturers have tools available to format a FAT32 drive to a single large partition under Windows, though by the time you read this, we're told that the BlackBox will have its own in-the-box disc formatting functionality. Using multiple partitions is possible with the BlackBox via a selection within the menu.

As some popular DAWs are fussy about large files, the BBR can automatically split files to your preference. Just tell it the maximum file size you want (1, 2, or 4 GB) and if you reach that limit with a file, another one is created immediately at the next sample. During the import process, simply stitch these two files together in your workstation for uninterrupted playback.

I asked Joe about using a buss powered hard disk, to eliminate a power supply. Basically the BlackBox supports the USB2 standard, which

I'm told supports a power consumption of up to 0.5 amps. However, it would seem that some of these buss powered drives spike as high as 2-4 amps when powered up. Powered USB hubs have been tested and found to work with the BlackBox, but then you need the additional power supply.

Joe is in discussion with Glyph about the possibility of a USB RAID system to go with the BlackBox – of course, any Glyph USB2 drive will function and it makes some tasty rack mount drives. Having a mirrored RAID set would be desirable, so two drives would contain the same thing to guard against any hardware failures. *(Ed.– JoeCo has now confirmed that the BlackBox Recorder works just fine with a Glyph USB RAID array).*

> "The small size and light weight of this unit are also to be celebrated – it could easily be taken on a plane as hand luggage."

In Use

When you first power up the unit, so long as a drive is powered and connected, it's ready to record in under 10 seconds – my specific setup was recording audio eight seconds after the power came on, which is pretty impressive. In a default state, all 24 tracks are armed and ready to go and playback is locked out. The internal battery keeps your preferences such as sample rate and bit depth as you last had them. I was using unbalanced inserts with the supplied eight-way looms. After setting the BBR to the correct operating level I was recording in no time, when playing back a song all the inputs appeared on the desk exactly as if the band were playing (minus the noisy stage, of course!).

When a new recording is started, the BBR 'locks' playback – handy if you don't want to accidentally start playing a song in the middle of the set and embarrass everyone. Once unlocked via the menu, you can play back any of the songs on the drive.

To let you know the BBR is recording, track arming LEDs go a solid red and the counters start counting, the data wheel starts a circular led 'chase'. Basically the whole front panel makes it obvious at a glance that things are happening and all is well.

Once in motion, the machine will record until the stop button is held for two seconds, which helps against accidental operation. To monitor a rough mix on cans is easy – using the stereo monitor buss where you can PFL pairs of inputs or listen to a rough mix. The monitor mixer is easy to use as it only has level controls with no panning (odd and even pairs are panned hard left and right at all times).

The files are organised into folders for each day. The default filenames will be 'nnn-tt.wav', where 'nnn' is the song number, and 'tt' is the track number. If you name the song and track you get 'nnn-tt.song-track.wav'. I found this really helpful, as it makes life easier and keeps things organised. Saving time in post is also a factor, as you don't have to name the tracks again – hooray!

It's easy to create a new song by pressing the 'record' button during recording. Once stopped, the BBR will need a few seconds to write all the headers to the disc before starting another recording.

Conclusion

The BlackBox is undoubtedly a fantastic bit of kit, by using a 'disposable' drive as a recording medium saves time when it comes to transfers – something anyone familiar with other hard disk recorders will appreciate. The small size and light weight of this unit are also to be celebrated – it could easily be taken on a plane as hand luggage. For a reliable computer multi-track system you are really looking at something a bit bigger than a laptop – replacing a pro rig with a set of BlackBox interfaces and hard drives will certainly save on the weight and power consumption. For anyone who needs to record a multi-track quickly and reliably without having to think about it, this is a very elegant and cost effective solution.

INFORMATION

£ GB£1,740.00 (exc.VAT)

Ⓐ JoeCo Ltd., 135 Histon Road, Cottenham, Cambridge, CB24 8UQ, UK
Ⓣ +44 (0) 1223 911000
Ⓦ www.joeco.co.uk
Ⓔ infoamart@joeco.co.uk

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CEDAR DNS3000

With both Pro Tools integration and it's own snapshot automation, the DNS3000 is a a tool that SUSAN PENNINGTON can't live without.

The Cedar DNS3000 is the latest addition to Cedar's DNS (Dialogue Noise Suppression) family, other members of which have been in use in audio post production for nearly 10 years. The original DNS1000 (now discontinued) was awarded a Technical Achievement Award by the Academy of Motion Picture Arts and Sciences, and the DNS1500 and DNS2000 are often used in forensic restoration as well as film, music, live events, and computer game audio. The Cedar DNS3000 uses the same award winning technology inside the box, but combines the connectivity features of its predecessors, as well as adding new ones to enhance the de-noising workflow. For those of you not fortunate enough to be familiar with Cedar's DNS technology, it is broadband noise reduction like no other, centred around a series of sophisticated digital filters. These analyse the incoming signal and suppress noise in each filter in real time. The six gain control faders each control several of these filters, which is the key to Cedar's innovative design, allowing users to control the unit using relatively few front panel controls. The six faders can be focused to concentrate on the whole, or just parts of, the audio spectrum, by selecting from full, high, mid, low, mid-low, and mid-high ranges. Selecting a range concentrates all of the filters across just that part of the audio spectrum. This filter bank technology and fader controls are the same across the DNS1500, DNS2000, and DNS3000, but the differences between the three units are in their automation and interfacing capabilities.

To give some background on where the DNS3000 has grown from; the DNS1500 is a standalone unit, with physical hardware faders similar to the DNS3000, but without any automation programming capabilities or Pro Tools interfacing. The DNS2000, on the other hand, interfaces with Pro Tools using Cedar's RCS plug-in (Remote Control Software), which virtually replicates the faders on the DNS1500, but the rack mountable unit itself does not have any user controls. The DNS3000 combines these traits, as well as several indispensable new features that will make de-noising a much more fuss-free process. All three units process the incoming audio in real time and can process two channels simultaneously with different settings, or be linked for stereo de-noising.

"Using the DNS I managed to get rid of the worst of the reverb tail, enough that we didn't need to ADR the scene... I was very proud of Cedar, having always believed that nothing can get rid of reverb."

Basic Operation

Getting your head around using the faders to de-noise audio is the same process for the DNS1500, DNS2000, and DNS3000, regardless of whether you're using hardware or RCS faders. You won't get very far without the manual, as the controls aren't particularly intuitive at first look, but it's very easy to get the hang of it. The manual takes you step by step through choosing the correct range setting, identifying the noise floor level with the level fader, then adjusting the band gain control faders to suppress as much noise as possible without introducing unwanted artefacts into the audio signal. This process soon becomes second nature once you get a feel for how the range bands divide up the audio spectrum, and de-noising a section of audio takes no time at all.

The manual also gives three helpful case studies on situations you might come across; suppressing traffic noise (low-mid noise), suppressing tape hiss (high range noise), and the third, which I've always found particularly interesting; suppressing excessive reverberation. I recently achieved surprisingly good results using the latter on some sync dialogue recorded in a very reverberant aquatic stage. The dialogue was quite shouty, and the scene was set on open water, so the untreated dialogue was unusable. Using the DNS I managed to get rid of the worst of the reverb tail, enough that we didn't need to ADR the scene, once the dialogue was somewhat buried under layers of waves and boat engines. I was very proud of Cedar, having always believed that nothing can get rid of reverb. Needless to say the producers were happy too. ▸

THE REVIEWER

SUSAN PENNINGTON worked freelance for several years as a dialogue and sound editor before joining the team of in-house engineers at Spool Post Production in Nottingham. www.spoolpost.com

This is a bit of a cliché, but once you start using Cedar's DNS technology, you'll wonder how you ever managed without it. I really mean that. I've been using the DNS2000 for several years, and it has rescued me from ADR so many times I can't count. Of course the DNS has its limitations, but they're high above any other noise reduction systems I've used before. Like any broadband noise reduction, it is most effective on signals that are well recorded, i.e., closely mic'd or on-axis, and with a constant (even if loud!) noise floor that isn't contaminated with footsteps or other transient background sounds. If you have got background transients, help out the Cedar a little by editing the 'fill' to contain only constant noise. Applying EQ before the Cedar, e.g., bass roll-off, or notch filtering out prominent tones can really aid the clean up process by allowing you to concentrate the Cedar in other areas of the audio spectrum.

DNS3000

Having used the Cedar DNS2000 for many years, I was excited at the chance to get my hands on the DNS3000, with its tactile hardware motorised faders. I had no trouble in hooking it up in place of our DNS2000, and it was great to use real faders instead of clicking, dragging, and scrolling on the RCS plug-in.

The unit is much bigger than I expected so it can end up fighting for space on the table top, and the faders are quite chunky and widely spaced, so they don't quite fit comfortably under my hand, but then my hands are probably smaller than the average sound engineer. The equally chunky channel select, range control, and bypass buttons sit above the faders, and in contrast to these are the small soft keys below the screen that give access to the menus. The screen is a great feature, allowing users to see at a glance the fader and range settings for both channels, as well as indicating if the unit is in remote control mode or touch mode. A scroll wheel aids navigation through the menus and data entry.

Audio I/O connections to the unit are digital only, and can be made by either S/PDIF or AES/EBU (sample rates up to 96KHz are supported). Connection to the host computer is by Ethernet, rather than the USB connection of the DNS2000. Finally there's an LTC timecode input, to facilitate the automation of the snapshot feature.

The RCS software is compatible with Pro Tools (HD, LE, or M-Audio), and can control up to 126 DNS3000 units, which I'm sure is more than enough for any studio. Latency is minimal (the manual states less than 10 samples), and as the plug-in is only controlling the hardware, it doesn't need to reside on the track on which your hardware is inserted, so using a dummy track for the RCS plug-in reduces the latency to the minimum. The DNS3000 is compatible with the DNS2000 RCS, so I was able to simply load up existing dialogue edit sessions and select the DNS3000 instead of the DNS2000 in the RCS plug-in, and all my automation and presets were available to the DNS3000.

The feature that had really caught my eye in the promotional information about the DNS3000 was not the physical faders, but the fact that it connects to its host via Ethernet, rather than the USB connectivity of the 2000. This makes it ideal for using in multiple studios (though obviously not at the same time). Our DNS2000 is constantly being un-plugged and re-racked each time we want to use it in a different studio. I was able to install the DNS3000 in our main dialogue editing room, where we would make most use of the physical faders, but with a quick scan of the network and a few patch cords, still be able to use it via the RCS plug-in in any of our other Pro Tools rooms. In our main studio the controls of the RCS can be spilled onto the faders of our ICON desk, so I didn't even miss the hardware faders when it was installed in another room. You can even unlink the hardware from the RCS by deselecting both channels on the unit, thus avoiding accidental setting changes by the engineer in the other room.

I found the 'touch' mode a really useful feature when using the RCS software with the hardware faders on the DNS3000. If you've already written automation in Pro Tools and you move any faders on the DNS3000 while playing back, those faders enter 'touch' mode, where the unit ignores any settings from the RCS for those parameters you've touched. This is really useful for auditioning changes to the automation you've already written in Pro Tools, without having to suspend automation in Pro Tools, since the DNS3000's touch mode does not affect Pro Tools' automation state.

Snap Happy

Many of the DNS3000's new features are intended for non-Pro Tools users, since the automation capabilities of the RCS plug-in make for a much better workflow than using the snapshot features within the DNS3000. There are two ways of saving and recalling settings within the unit: Presets and Snapshots. Both can be backed up to any host computer via the Ethernet connection, so the settings can be archived with the rest of your project data, and be recalled to any DNS3000 at a later date.

Up to 100 user-definable presets can be saved, which contain settings for all faders and range settings for a single channel, and can be recalled to either channel.

The snapshot feature is where the DNS3000 comes into its own. Simply feed the unit with LTC, and you can save snapshots of both channels to be recalled against the timecode. The DNS3000 gives you plenty of options to do this, of which I found the easiest was to capture the settings on the fly, then go in and tweak the timecode manually if needed. You can also move and copy snapshots, and copy new settings into an existing snapshot if you want to tweak settings already made, but you have to be constantly aware that the snapshot is always of both channels. This gets complicated if you're trying to set up automation for overlapping chequer-boarded dialogues, for example, but it's probably rare that you would need such complex automation.

Conclusion

As a DNS2000 user, I found the DNS3000 to be a nice step up from its predecessor; the networking capabilities make it much easier for the DNS to be shared between studios, and the hardware faders are much nicer to use than the virtual RCS.

For non-Pro Tools users, however, the DNS3000 is really something to be excited about. It's a fantastic upgrade from the DNS1500, where users had no automation or preset capabilities. It allows all editors the same level of Cedar workflow that has until now been the domain of the privileged Pro Tools user.

The DNS3000 is a powerful noise reduction tool that really is in a league of its own. Flexibility is its main attraction, being useable by both Pro Tools and non-Pro Tools users. No post audio facility should be without at least one piece of Cedar DNS hardware, and the DNS3000 is really the most versatile unit there is. AM

INFORMATION

£ GB£4,900.00 (exc.VAT)

Ⓐ Cedar Audio Ltd., 20 Home End, Fulbourn, Cambridge CB21 5BS
Ⓣ +44 (0) 1223 881771
Ⓦ www.cedaraudio.com
Ⓔ info@cedaraudio.com

The Circle Game

Surround Recording Options

While still a fairly niche sector in the recording world, the capture of surround sound at source has emerged from a world of academic interest, low domestic uptake, and lack of formats, to become an object of desire. This is particularly true in the sports broadcast world where live surround feeds are needed to bring three dimensions to HD. It's a good time then to look at a selection of the main players and their wares...

DPA has got two main options in the surround recording field, both based around innovative hardware to support a DPA microphone array. The 5100 is a compact, lightweight mobile surround solution with a variety of mounting options, including camera, mic stand, suspension, or handgrip. The microphone itself uses five aligned and matched miniature transducers in wind-protected mount/baffle hardware and produces a discrete surround output with no decode necessary.

The DPA Decca Tree (D3) and S5 surround mount combine to make a flexible and modular microphone system for two to five microphones with many options including flexible angles and spacing of a surround configuration, particularly with the Decca arrangement of three omnis at the front and two cardiods for the rear. Several other standard spaced array configurations are possible with the same rig.

Grace Designs

Grace Designs makes the Spacebar modular microphone positioners – a modular sytem designed to make pretty much any multi-microphone set-up a simple matter. The SB-SUR is a preconfigured surround sound arrangement, but that doesn't stop you mixing and matching to create your own preferred set-up.

Holophone

Holophone's egg-shaped surround solution is very recognisable and comes in a variety of flavours. The top of the line H2-PRO is designed for surround capture up to 7.1 (with centre rear and top channels). The body of the microphone is designed to emulate the characteristics of the human head to produce a realistic surround experience. There are several mounting options available, plus a windscreen option.

The H3-D is less expensive than the H2-PRO and is a dedicated 5.1 system with five main microphone elements, plus a discrete LFE mic – all built into the familiar egg.

For portable applications where size is everything, Holophone offers the H4 SuperMINI and the PortaMic 5.1. The H4 SuperMINI is camera mountable and has six microphones that capture full 5.1 surround. The six channels are fed into a Dolby Pro-Logic II encoder and the matrixed audio comes out as a stereo pair ready for decoding back at base. The H4 SupermINI also has an input for a centre-channel shotgun or lavalier, a zoom button for increased forward bias, and virtual surround monitoring via headphones. The PortaMic 5.1 is a more cost effective miniature surround mic with onboard PLII encoder.

Microtech Gefell

The Microtech Gefell INA 5 is an extension of the company's INA 3 designed specifically for surround recording. It's designed for large diaphragm cardioid microphones, and a matched set of microphones for the unit is available from Gefell. The bracket system itself has three front spokes for centre, left, and right (90° from centre, up to 17.5cm mic placement from centre) and two rear spokes (60° angle, up to 59.5cm mic placement from centre). By unscrewing guard rings on the mounts, the microphones can be moved along the spokes for variable placement; and other configurations are available on request. There's also an INA 5-R (weatherproof) incarnation of this product, with windshields plus special mesh inners that guide any penetrating rain away from the microphones.

Sanken

Sanken's WMS-5 Double MS surround microphone is a self-contained pencil-style microphone, only 235mm long, that produces five surround output channels by using MS to LR matrix circuitry in the body of the microphone. According to Sanken, the microphone's main strength's include delivering "realistic surround sound with minimal setup time". The C capsule has 'shotgun directivity', capsules are set on a consistent vertical axis with a 120° stereo angle, and there are various mounting options available, including camera, boompole, or pistol grip.

Sanken's other surround offering is a double helping of the CUW-180 dual cardioid condenser unit. By using the independent capsule angle adjustment and a specially designed suspension mount for the CUW-180 Surround System, the front two capsules provide front L and R, while the others provide Surround left and right signals.

Schoeps

Schoeps has a number of surround recording options addressing the main surround configurations and methods. Its Double MS offerings are the Double MS DMS range, which uses discrete Schoeps CCM microphones in a DMS LU elastic suspension, and the CMIT Double MS set, which uses two CCM mics (figure-of-eight for side, and cardioid for the rear mid channel), plus the Schoeps CMIT 5 U shotgun microphone for the front mid channel.

For an OCT (Optimized Cardioid Triangle Surround) configuration – and un-matrixed method – Schoeps provides discrete mounting hardware components, or everything you need in its OCT Surround Set.

For surround ambience or 'room tone' recording, possibly in combination with another surround set-up, ▸

Schoeps provides the IRT Cross Set – a CB200 cross mount plus four CCM cardioid microphones (though other mics can be used). The microphone outputs are discretely routed to the L, R, LS, and RS channels.

The company also provides an ORTF Surround Set for recording surround ambience with "good 360° imaging with a pleasant, natural-sounding spatial ambience." The ORTF Set uses four CCM 41 L supercardioid microphones.

Also, Schoeps has embraced the KFM configuration, apparently born of an idea from Jerry Bruck of Posthorn Recordings. The technique claims to yield "excellent spatial reproduction and well-balanced, natural sounding localizability of sound sources." It's a matrixed system, and the complete Schoeps KFM surround system includes the KFM 360 sphere microphone with suspension for two figure-of-eight mics, two CCM 8L microphones, plus the DSP-4 KSM 360 processor. Being a matrixed system, you can record the discrete, raw signals and make the important decisions at the post production stage.

Schoeps can supply a wide range of windshields, mounts, and other accessories for its various surround sets.

Soundfield

The full size, tetrahedral, multi-capsule Soundfield microphone now has several incarnations in several systems. The company's broadcast products include the DSF-2 system, a digital system (BNC AES 3-id outs) with Soundfield mic designed to provide both surround and stereo feeds at large-scale events. The DSF-1 system is a derivation of the DSF-2, but with AES-EBU outs on XLRs – aimed at the performance broadcast and recording markets. Other broadcast hardware available includes the DSF-3 (a digital B-Format processor for 5.1 and stereo), and the UPM-1 (digital upmix processor).

The SPS422B system comes with an analogue 1U processor for mono, stereo, MS, and surround generation, with all outputs on line-level balanced XLRs. While the Soundfield MkV system comes with a comprehensive 2U rack processor with ultimate control and B-Format input for post production processing.

For more compact needs the company offers the SPS200 software controlled microphone – a miniature Soundfield mic that ships with Surround Zone software instead of a hardware processor. And there's the ST350 portable microphone system that offers a lightweight multi-capsule microphone and compact mic-pre/control unit with both mains and battery powering options.

Trinnov

Trinnov has quite a unique approach to surround recording with its HSR (High Spatial Resolution) technique and "spatial sampling of the acoustic field." The SRP (Surround Recording Platform) mounting system supports eight omni-directional capsules for "accurate, broadband frequency response" and "very accurate time cues… ideal for spatial mapping." To complete the system you need the SRP Processor, which derives each surround channel from all of the microphones in the array by converting time differences between signals into amplitude differences. Trinnov says that each channel contains more spatial information.

INFORMATION

DPA Microphones
www.dpamicrophones.com
Grace Designs
www.gracedesign.com
Holophone
www.holophone.com
Microtech Gefell
www.microtechgefell.de
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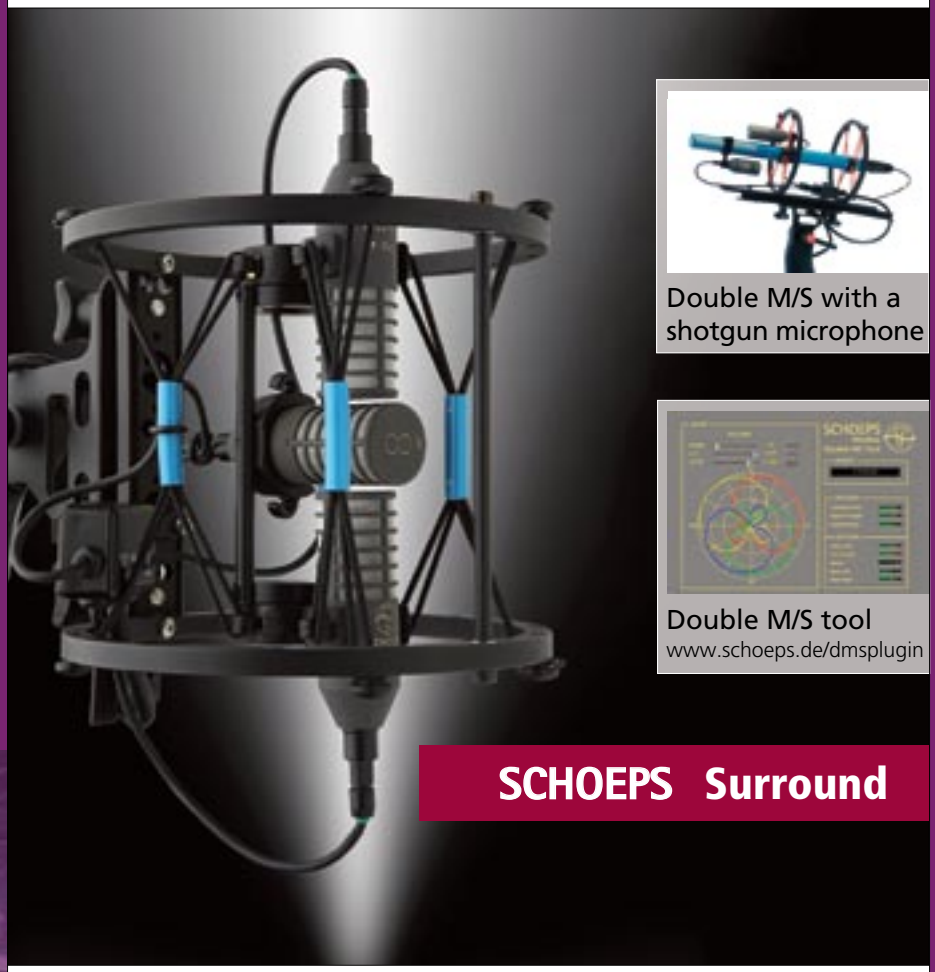


SCHOEPS GmbH
Spitalstr. 20
D-76227 Karlsruhe

www.schoeps.de
mailbox@schoeps.de
Tel. +49 721 943 200

Trade Shows 2010

The **2010 NAB show** will once more be held at the huge Las Vegas Convention Centre near the Las Vegas Strip this April, and will include more than 1,500 exhibiting companies in 800,000 square feet of exhibit space focusing on content and content lifecycle. The buzz word for this year's event is 'broader-casting', covering all the new technological trends across multiple platforms and applications. There will be a Broader-casting Conference with three programming streams that will gather leading media executives, content creators, and technicians for an in-depth examination of the intersection of creativity, technology, and developing business models. The conferences will run from April 10-15, exhibits from April 12-15, and the conference centre is within walking distance of over 100,000 guest rooms.

www.nabshow.com

Held at London's Earls Court 2 from February 16-18, **Broadcast Video Expo** covers the whole breadth of the production, post, and delivery market for audio and video. The show hosts over 200 exhibitors and claims to be the only technology exhibition in the UK that is totally dedicated to this field. This year, there will also be a sister show running alongside Broadcast Video Expo. The Production Show is aimed at companies and individuals working in film, TV, and facilities that want to meet new service providers and suppliers and get together with peers and colleagues for industry discussions.

www.broadcastvideoexpo.co.uk

The international **Prolight + Sound** trade fair takes place in Frankfurt, Germany, over four days from March 24-27, and presents products and services from the fields of event and communication technology, audio-visual production, and entertainment. The show, which is held at the Frankfurt Fair and Exhibition Centre, has a new hall structure this year that should mean shorter walking distances for visitors. The show is held in conjunction with parallel trade fair Musikmesse, which gives dealers, professional musicians, and music lovers an insight into the latest trends in musical instruments, sheet music, accessories, and computer hardware and software. Prolight and Sound attracted 34,000 visitors last year, with 850 exhibitors coming from 42 countries.

www.prolight-sound.com

CABSAT MENA is the leading international digital media event for the Middle East, Africa, and South Asia, and is held at the Dubai International Convention and Exhibition Centre from March 2-4. The event has been taking place since 1995, and is the third largest trade fair of its type in the world, with CABSAT 2009 attracting 8,603 visitors and 678 participating companies. Satellite MENA was launched last year, and runs in conjunction with CABSAT. It is the first event of its kind in the region and is pitched at broadcasters, commercial entities, telecoms operators, government, NGOs and the military; and aims to be an industry networking platform to explore business opportunities, formulate strategies, and create partnerships for video, voice, data, and IP communications over satellite.

www.cabsat.com

NAMM hosts two trade shows a year in North America for the musical instruments and products industry. First is the **NAMM Show 10**, which takes place at California's Anaheim Convention Centre from January 14-17. The event features musicians such as Quincy Jones, Yoko Ono, Stevie Wonder, and Gene Simmons. Later in the year, **Summer NAMM** will be held in Nashville, Tennessee from June 18-20. This smaller show is more focused on industry meetings and professional development.

www.namm.org

The 32nd **ABTT Theatre Show** will take place in London's Royal Horticultural Halls on June 16-17. Attracting an expanding visitor base year on year, the ABTT Theatre Show's core attendance comes from parties involved in equipping, refurbishing, and upgrading drama studios, theatre, and auditoria. Other frequent attendees include architects, consultants, and building service managers.

www.abtt.org.uk

Music Live is the place to check out the latest and greatest gear from the world's most famous brands. The show is set to run at the Birmingham NEC from November 5-7, and should see the return of its Live Stage and Drum Clinics, the Sounds Expo area, and a bevvy of guest star performances. Previous guest performers include The Burning Beat Boys, They Fell From The Sky, and Rick Parfitt.

www.musiclive.co.uk

A single event created in 2008 by the merging of Siel, Satis, and Le Radio, this show unites the markets of audiovisual technology, live entertainment, event production, and radio broadcasting. Over 400 exhibitors and nearly 35,000 trade professionals descended on Paris for the event last year. **SIEL-SATIS-RADIO** takes place this year at the Paris Expo, Porte de Versailles exhibition centre, from October 19-21.

www.siel-satis.com

The annual **PLASA** show, dating back to 1977, is a well-established technology trade event for the entertainment and installation industries. The exhibition has continuously attracted buyers and specifiers from around the world, and is now probably the UK's most successful show in this arena. PLASA 2010 will be held from September 12-15 at Earls Court, London. It will be the 33rd exhibition to be held in the venue by the Professional Lighting and Sound Association. PLASA is an international show, delivering the latest technology, product launches, and networking opportunities for retailers and buyers alike. It also offers an educational programme designed to respond and influence change within the entertainment and installation industries. Last year PLASA launched a second event, PLASA Focus, a networking event that will be held again this year at the Royal Armouries, Leeds, on April 27 and 28.

www.plasashow.com
www.plasafocus.com

PALME has four events across the world this year, dedicated to pro lighting, audio, music, entertainment, audio visual, and systems integration solutions. PALME Middle East, now in its eighth year, takes place from April 18-20 at the Dubai World Trade Centre and features a two day AV, systems integration, and lighting conference, and a four day education programme. Last year the show saw 162 exhibitors from 38 countries exhibit to over 6,000 visitors from 73 countries. Delegates can enjoy a Laser Extravaganza held at regular intervals throughout the event, and also relax and meet other visitors and exhibitors at the PALME party, the key social and networking element of the exhibition. There is also the PALME Awards, which this year will take place on April 19. The ceremony recognises and rewards innovation and technical excellence and is judged by a panel of independent judges from across the industry. PALME Middle East runs in conjunction with Install Middle East, aimed at those working in AV and systems integration technologies, and MUSAC Middle East, a bespoke event for the musical instrument and accessories industry. On top of all this, pro DJs from around the region are battling it out at the PALME DJ competition. PALM Expo 2010 China is at the China International Exhibition Centre, Beijing on May 20-23, and caters for the fast growing Chinese entertainment industry. With real GDP growth in China forecasted at 8% in 2010, the expected growth of the global entertainment industry by 10% in the next four years is largely set to be driven by China. The investment threshold in the entertainment and cultural indistry has been lowered, and more private and foreign companies are to be allowed to invest in state-owned media groups, so it is an exciting time for the industry in the region. PALME Vietnam is on July 22-24 at Saigon Exhibition and Convention Centre, Ho Chi Minh City. PALME India is set to take place again in 2010 after a successful show in 2008, but dates have yet to be confirmed.

www.palmeonline.com

Now in its fifth year, the **Develop Conference** in Brighton has established itself as the leading event for games design and development professionals in Europe. Develop 2010 will be held at the Hilton Brighton Metropole from July 13-15. The event attracts developers from every level, drawn to Brighton to meet, learn, share, and network with peers. The show aims to help today's developers make better games with seminars, sessions, workshops, expositions, and networking opportunities. In the evenings following the show, there are a series of ice-breakers, debates, and awards, with lots of opportunities for developers to relax and have fun.

www.develop-conference.com

The **Audio Engineering Society Convention (AES)** is a bi-annual pro-audio event that combines exhibits with technical sessions and user seminars. Each year, AES is held once in Europe and once in the USA. The conventions are the largest gatherings of audio professionals in the world, and attract academics, engineers, and artists alike. A large portion of the event is taken up with the presentation of papers, workshops, and meetings of the standards committee, as well as the main exhibition. AES usually has a theme, with a respected keynote speaker officially opening proceedings, and offers a packed programme of events. The European Convention is in London this year, taking place from May 22-25 at the Novotel London West Convention Centre. In the US, it's the turn of the West coast to host proceedings, with the convention heading for the Moscone Centre in San Francisco from November 4-7.

www.aes.org

IBC 2010 will once again be held in Amsterdam's RAI Centre, with conferences running from September 9-13, and exhibits from September 11-15. The show remains popular despite current economic challenges; IBC 2009 attracted 45,547 attendees, a drop of only 7% on 2008. 1,300 exhibitors took part, including over 100 new exhibitors. The show is aimed at professionals involved in content creation, management, and delivery, and brings the industry together to learn, discuss, and promote the current and future developments that are shaping the media world. One of the highlights of IBC is the awards ceremony, which recognises those who have made a real contribution and whose careers have changed the industry.

www.ibc.org

Energy and Enterprise

The Rise And Rise of Thomas Dolby

Thomas Dolby went from being a Synth-pop pioneer to a sonically-gifted Silicon Valley entrepreneur, seemingly without skipping a beat. Now he's back to basics... and he's got a boat. JONATHAN MILLER charts the journey so far.

Throughout the Eighties and into the Nineties Thomas Dolby carved himself a comfortable multi-faceted musical niche as an innovative recording artist – with four albums spanning 1982's analogue synth-driven *The Golden Age Of Wireless* to the digital delights of *Astronauts & Heretics* via the Fairlight CMI exploratory exploits of *The Flat Earth* (1984) and 1988's funk-influenced *Aliens Ate My Buick*. He was also a session musician – including various signature synth contributions and TV appearances that included the likes of Foreigner, David Bowie, Depeche Mode, Roger Waters, Joni Mitchell, and a long relationship with Prefab Sprout.

Dolby additionally turned his talents to feature film scoring with varying degrees of success, starting with *Fever Pitch* (1985), then George Lucas' *Howard The Duck* (1986), and Ken Russell's *Gothic* (1987), though ultimately the experiences proved frustrating for someone so used to exercising a fine degree of control over his musical art.

New Worlds

Dolby then became notably absent from the mainstream music business, through a mix of label politics and the lure of a technology revolution. "I never really meant to spend as long away from music as I did," he says. I always assumed that I would come back to it, after I got out of it in '92.

"I got involved in some politics with my then-label, EMI America; my then-manager really hated them, and he tried to prize all his acts away, and I was a bit of a pawn in that. The long and short of it was that I found myself midway through Astronauts And Heretics without a label, and that's a very disconcerting feeling.

"Meanwhile, technology beckoned; I started to work with a few tech companies, and I went to Silicon Valley. It seemed to me to be a huge opportunity for music, both from a distribution point of view and also really coming face to face with a few fans on the Internet, and just realising how incredibly insulated the conventional music business had made artists from their fans.

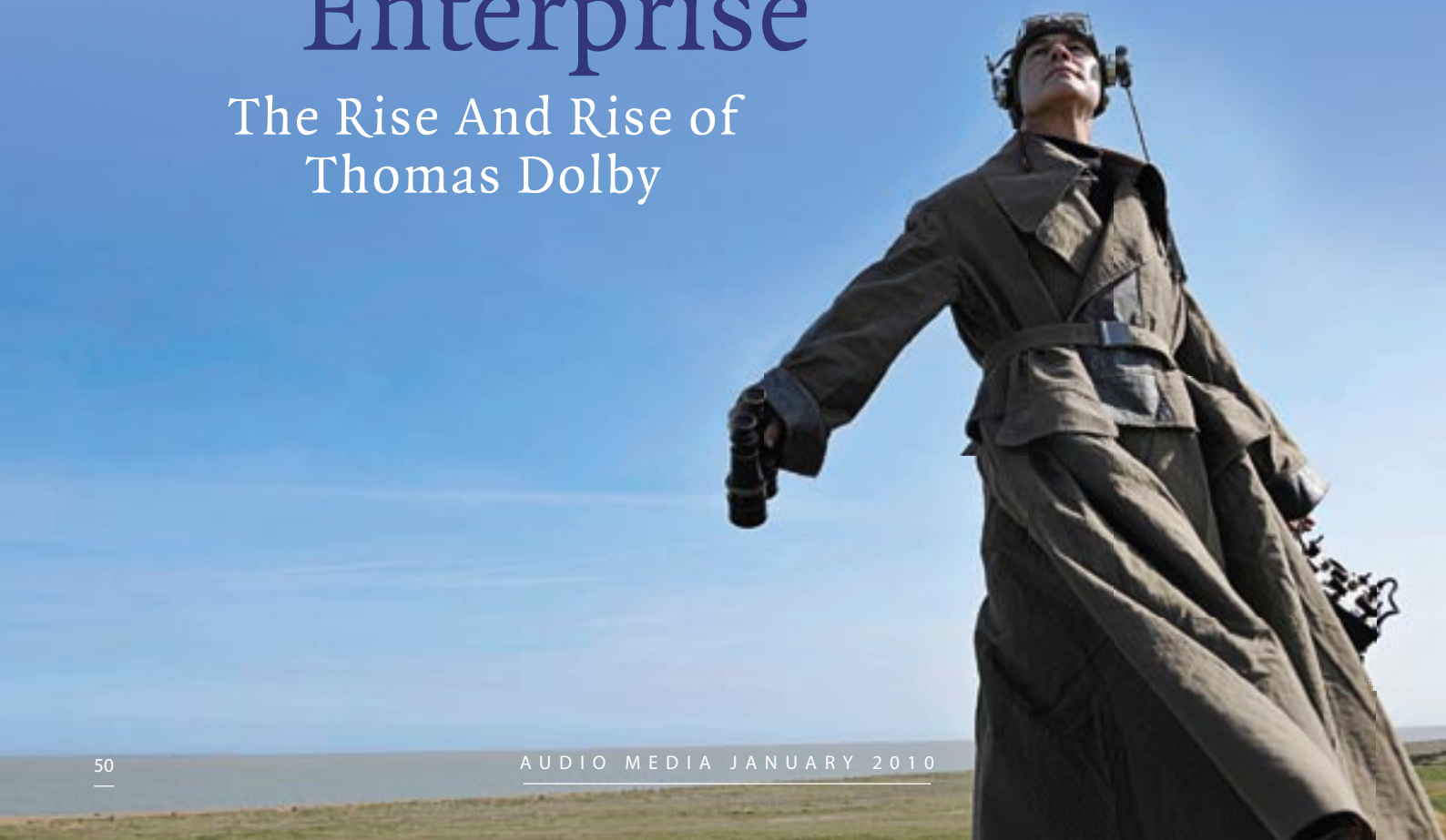
"I think the seeds were sown with the opportunity for artists to get a beeline directly to the audience, and it started to occur to me also that when I wrote a song, or whatever, I was concerned about all these people in-between... A&R men, marketing people, independent radio pluggers, DJs, and producers. If it gets played on the radio, and if it gets stocked in the stores, only then does the public really get to decide if I really wrote a good song or not.

"So the first glimpse I saw of an alternative to that got me very excited. I'm not saying, 'Oh, I saw the whole thing unfolding; in 1992, I knew how it was going to be.' I just thought there was a liberation that could come about via technology."

> "It seemed to me to be a huge opportunity for music, both from a distribution point of view and also really coming face to face with a few fans on the Internet, and just realising how incredibly insulated the conventional music business had made artists from their fans."

The Final Frontier?

What Dolby did next inadvertently involved setting sail to the heart of technological innovations, creating interactive music software that would free him up from the constraints of traditional linear composition. In 1993 he set up Headspace, Inc. with multimedia



entrepreneur Mary Coller in the San Francisco suburb of San Mateo, to produce software applications and content for the Internet. "We did that in order to try to persuade more top sites to add sounds to their pages, because it was a very silent world back then," recalls its co-founder, continuing: "Our slogan used to be: The web is a silent movie, just waiting for the talkies."

Dolby undersells his Headspace adventure somewhat when saying, "We found a rich guy to fund us to make cool, interactive music projects", for the backer in question was none other than Microsoft co-founder Paul Allen. Predictably, perhaps, what started out as adventurous game creations and navigable musical spaces soon "… turned into hardcore venture capital, looking for things that could turn out big for them."

Far from being blinded by science, however,

> "We found a rich guy to fund us to make cool, interactive music projects" . . . the backer in question was none other than Microsoft co-founder Paul Allen."

Headspace set about developing the Beatnik Audio Engine, which original co-developer Dolby describes as being "…quite a lightweight software synthesiser – nothing like [Propellerhead] Reason or any of the state-of-the-art musician ones; it was designed to download as invisibly as possible in a web-page over low bandwidth, and then allow interactive sounds to be fired off. It had a General MIDI synth in it, but we had a file format – RMF [Rich Music Format] – that enabled you to embed a sample or two, along with the MIDI files."

Set To Stun

Eventually Headspace hit it big by accident when leading mobile phone supplier Nokia quietly expressed an interest in adapting Beatnik technology to produce polyphonic ring-tones above and beyond the boring 'beeps' being emitted by the competition of the time. Recalls Dolby: "Their CPUs were sort of tortoise-like, but we were able to get a four-voice version of Beatnik going, and we worked with them for a while."

Again, this is something of an understatement on Dolby's part: "It didn't take us long to realise that we were basically in every one of Nokia's phones from about 1999 onwards, and we still are – that's two- or three-billion units at this point, which is quite mind-boggling!"

So what was Dolby's role following this fortuitous financial breakthrough? "My focus there was trying to get people to use the RMF format and do hybrid ring-tones that were MIDI controlling samples; there was a point when they said, 'We don't see why we couldn't just use a WAV file or an MP3 of the actual song, but at the moment that's too big to download.' There wasn't the storage either, so there was this golden period where we got people quite excited about RMF."

Technology waits for no one, of course, and everything eventually changed, once more powerful phones could handle those previously ▸

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pesky WAV files: "That was also fuelled by the record companies, because the initial explosion of ring-tone downloads had nothing to do with the record companies; some of their artists were represented – badly – in MIDI. When WAV files came in, suddenly if you wanted Beyoncé you had to go to Atlantic, or whoever it was, and license the actual recording, so now the record companies could talk directly to the operators. The only intermediaries were those people willing to just convert and chop up little WAV files and MP3 files for peanuts, so it very quickly ceased to be creative to me, because it was more about engineering and sales."

Ironically, it seems, the mainstream music business that Thomas Dolby had walked away from at the tail end of the 20th Century had once again caught up with him at the beginning of the 21st in a more tech-savvy guise. "I never went into it to be a businessman in the first place," he notesy. "I went into it because it was an interesting, creative challenge that stretched me a bit, and so, in about 2005/'06, I sort of backed off; I'm still a director of Headspace, but, finally, it was possible for me to get back into music."

> "Every four or five years there's a big tide, and you get a wave through the garden. I came up with the idea of a lifeboat in the garden on blocks."

Live – But Not As He Knew It

Getting back into music initially involved returning to the live arena: "I wanted to get out and reacquaint myself with my old stuff and with the audience, and check out new technology; I had a lot of catching up to do," he notes.

And so it was that Thomas Dolby effectively came back to life, suitably armed and ready to take to the stage for his first proper North American tour in 18 years, much to the delight of his online faithful followers, and captured for posterity on the independently issued *The Sole Inhabitant* Live Concert CD and DVD. Interestingly, Dolby surely succeeded in expanding his audience during 25 of those performances throughout November and December 2006 when co-headlining another North American tour with electronic music's so-called renaissance man BT (a.k.a. Brian Transeau) – himself a Dolby fan – in what was billed as being a 'Sonic Dual For Virtual Supremacy'.

After more gigging in Autumn 2007, this time in Canada, the UK, and Eire, it was time for Dolby to think about recording some new material.

Next stop? Healthily applying new technology to some serious song-writing. Says Dolby: "It focuses me on what I do uniquely, because, from a writing perspective – and, to a certain extent, an arrangement perspective, there is stuff I do that I'm 100 percent certain that nobody else in the world is coming up with... My motto now is: only do what you can do. I think the worst thing for me to do would be to fire up some of these plug-ins and synths, get a four-on-the-floor groove going, and try and do instrumental dance music. I mean, that is going to sound like everybody else, but I'm writing songs that have got a clear voice to them – not just in terms of a vocal, but in a literary sense."

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Ship-Shaped

To record the new material, Dolby chose the UK county of sleepy Suffolk, where Dolby's family still maintained a beach-side second home, far removed from the hubbub of Silicon Valley. Dolby set about building himself a new studio set-up, but that was easier said than done, given its proximity to the treacherous North Sea: "Every four or five years there's a big tide, and you get a wave through the garden. I came up with the idea of a lifeboat in the garden on blocks."

Twenty five (unsuccessful) vessel viewings later and Dolby has himself an unusual and inspirational studio workspace aboard a 1930s-vintage lifeboat, originally built as one of a pair for the British merchant vessel SS Queen Anne. Admittedly, The Nutmeg Of Consolation has come a long way following an extended period of renovation, reclamation, and renaissance since being moved at considerable cost from her previous resting place on a farm in Reading.

> "What I liked about it was the knowledge that everyday a couple of guys were going into an office and getting on the phone, working on my record."

Following a lifeboat 'launching' ceremony, today Dolby's happy as a clam again, writing, recording, and mixing his earlier-mentioned, eagerly-awaited *A Map Of The Floating City* album in his beautifully rebuilt wooden wheelhouse control room, decked out in a contrasting mix of cutting-edge music technology and vintage nautical collectibles.

It almost goes without saying, of course, that the younger man who vocally extolled the virtues of sustainable energy way back in 1982 on *The Golden Age Of Wireless*' prophetic Windpower should turn to the elements to naturally power The Nutmeg Of Consolation. A 450W marine turbine and two 180W solar panels do the job nicely.

Going Forward

So now that Dolby definitively has an almost finished new album in his sights, what's he going to do with it? This becomes even more pertinent given that the 'traditional' music business with which he was so dissatisfied has changed almost beyond recognition. "Well, I initially did my live album myself in the States – through CD Baby, and through my website, and so on. It was a gratifying experience to design the artwork and everything, and keep most of the proceeds," he begins, before proposing a re-engagement of sorts, starting with another gratifying experience, courtesy of UK independent Visible Hands. "They really wanted to make a vinyl version of it and put it out in the UK. They're a cool little label – sort of boutique, and it felt incremental, because it wasn't taken away from me. It wasn't, 'If you sign to us then you have to do this and this.' What I liked about it was the knowledge that everyday a couple of guys were going into an office and getting on the phone, working on my record. I rather liked the idea of having a team pushing for it – getting behind it, then a network sort of fanning out from that.

"So, when this new album comes out, I want to have somebody else involved; I'm not just going to try and do it myself."

Fair play to the man. Yet, as an astute businessman in his own right, Dolby is under no illusion that he can compete with the corporate marketing muscle of today's few remaining major record labels. One thing's for sure, however: having previously succeeded in so many seemingly disparate disciplines, he will more than likely succeed in creating an individual-sounding record – a record that will, in turn, attract much attention.

INFORMATION

www.thomasdolby.com

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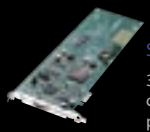

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One of the classic API consoles at RAK Studios, London.

It's A Classic

Stephen Bennett asks what makes a classic console 'classic', and to what they owe their lasting appeal.

The artistic Audio is one of the few areas of technology where older designs are not only revered by discerning people, but actively sought out and traded for high prices on the second-hand market. No one is going to lust over a 1970's TV camera and, while classic cars are admired, not many of us would want to drive an Austin Riley on their daily commute. Technology moves on and improves – or does it? The first problem you come across when trying to put together an article on classic consoles is how to define exactly what a classic is. I could have spent many hours on research and pondered over what should or should not be considered a classic, but instead I chose to sidestep the issue completely and ask someone else. Mark Thompson runs Funky Junk in London (www.proaudioeurope.com), supplier of classic and not so classic hi-end gear to the famous and upcoming alike. Offering consultancy, a repair and restoration workshop, a retail shop, and sophisticated demonstration facilities with an acoustically accurate control room, Funky Junk has become Europe's premier focus for those interested in classic consoles – so he should be in a decent position to define exactly what a 'classic console' is.

"Generally, if you were to describe a console as 'classic' it would be built before 1980 using discrete components (i.e. no integrated circuits) and it would be made in a kind of sub-modular way," says Thompson. "The classic EMI, Helios, and Neve consoles of the 60s and 70s were made so that the EQ was a separate module and the routing was a separate module and so on – and the same applies to the classic German ones such as the Neumann and Telefunkens. In other words, the individual modules including the mic preamps and the line amps were all 'cassettes' that plugged into a mainframe. Of course, it is a slightly semantic problem as certain SSLs, for example, are often described as 'classic' – but if you take the example of cars, an old Rolls or Ferrari might be described as a classic, but the same epithet might also be applied to a more modern car – but the word then has a different connotation. It might be a classic of design or a modern classic – but that's very different from a true classic car!"

"Generally, if you were to describe a console as 'classic' it would be built before 1980 using discrete components (i.e. no integrated circuits) and it would be made in a kind of sub-modular way..."

American humorist Carol burnet described comedy as 'Tragedy plus time' so might 'classic' just actually mean 'certain design criteria plus time?' Not according to Thompson. "The state of the analog(ue) audio art was probably reached in the 1970s and you have to bear in mind that this was on the end of a 60 to 70 year development period – so it's not surprising that the state of the digital art has not yet been reached! I'm of the opinion that all the developments since the 1980s have been solely with the aim of reducing manufacturing costs and generally improving the ease of manufacture, rather than improving audio quality – with one or two minor exceptions. These are usually to do with automated processes – and I don't just mean console automation."

Rupert Neve

In about 1965, a serious young man turned up at Penny & Giles, which was then a military equipment manufacturing company, with a box full of bits and said 'Can you make me one of these?' They were the parts for a plastic conductive fader and the young man was Rupert Neve (www.rupertneve.com). These components are now part of a multi million-dollar business and no serious console would sport anything else. Similarly, many of Neve's audio designs have never been superseded to this day, and Rupert Neve's own company is still making modules brimming with circuits which first saw the light of day in the 1960s – and which are still regarded as offering the ultimate sound quality. Of the classic Neves, the 8078 is considered by most to sit at the zenith of Neve's mastery of the audio signal path and arguably at the zenith of desk design. Used on countless records in the 1970s, it's a hand wired 40-channel design that would be totally uneconomic to manufacture today. Only a handful remain in lucky studios such as Konk in London's Tottenham Lane and the Village Recorder in Los Angeles. The console's 31105 four-band combination pre-amplifiers/EQ are much sought after and often found racked separately – it's a trend noted by Thompson. "I've recently been hunting out a vintage API for a 'name' band and have recently supplied classics to a number of other people. ▸

While the consoles in the '70s were rather large, these days, people with Pro Tools are happy with the limitations of routing and other facilities common on classics but want desks with smaller footprints. We're now cutting down classic Neves and even 'modern classics' like SSLs to smaller channel counts." Neve's 8048 console was the last of the 80 series 'hand wired' desks and features the Neve 1081 EQ module – again much extracted, racked, and copied these days (www.ams-neve.com).

Mac Vs. Eagles

Though both Neve and API's products featured heavily on many hit records recorded during the 1970s, they each had their singular signature sound – as Thompson explains. "Lets take one example – API. The USA-based company has made desks since the late 1960s and they were almost the American equivalent of Neve in that the design is a Class A with discrete, transformer balancing throughout. You'd tend to find on the west coast a kind of 'Eagles' sound – which was because of the trend for API desks, and on the East coast a 'Fleetwood Mac' sound, which was the results of the classic Neve desks." He continues: "Personally, I've always loved classic Neves and have had no desire to use anything else – but the classic APIs are very nice too. However, their point-to-point wiring can cause problems and I'm also not personally the world's biggest Helios fan – the build quality is poor and the frames don't travel well. The Neve stuff has a very musical sound – as do the recordings made on them! But most of these desks have a signature sound – put anything through an EMI TG desk and it sounds like Pink Floyd's Dark Side of The Moon. It's a one trick pony but it's a hell of a good trick! I've used every mic pre under the sun but I always go back to the Neve – though if I wanted a very clean sound I might go for something more modern. Transformers colour the sound in a very pleasing way." An original 1976 48-channel API sits at the centrepiece of Studio One at RAK studios in London with a 56-channel model resting stately in Studio 2.

A classic 80-series Neve console.

EMI TG

The EMI TG12345 is a 24-input mixing console, designed to replace the unreliable valve mixers used in the early 1960s – and is most famous for being the console not to have recorded The Beatles. Apparently only one album, Abbey Road, was captured through the dulcet faders of a TG – though these stories often get clouded by the (often drug induced) mists and myths of the past. The console used by Lennon and co has long since been broken up – but modules still exist dotted around the world. When people get 'gear lust' and track down a console that was used to record a particular favorite album, they are often disappointed that their efforts don't reach the heady heights of expectation. Of course, a recording is more than a desk – it's more than the gear – it's the rooms, the instruments, the performers, and the attitude of the times, and it's unlikely that you'll get anywhere near the sound you imagine by just using a classic console. The TG series was innovative in many ways. It was the first to feature a compressor on every microphone channel, an all balanced transformer input and output design, and each modular 'cassette' had its own DC power supply. The console series went through several revisions and most of the Abbey Road-based consoles are still in UK studios with one in Los Angeles – though many other TGs make claim to the Abbey Road crown! Mark Knopfler's British Grove Studios sports a couple of TG consoles along with some more modern Neve and APIs (www.tgmixers.co.uk/).

Trident

Trident's A Range is incredibly well respected but, according to the Thompson definition, inhabits a bit of a grey area. "The Trident A range came out in about 1973 and, although the compressors were separate, the rest of the channels were single channel strips – but it was a completely discrete transformer balanced design – so it would be classified as a classic console," he says. It was designed by Malcolm Toft (www.toftaudiodesigns.com), who now has his own range of classic recreations, for Trident studios in London. The console features a particularly attractive and colourful EQ section. The console's fame spread rapidly and many made it to the States to be heard doing the duties on David Bowie's The Rise and Fall of Ziggy Stardust, Lou Reed's Transformer and Queen's Sheer Heart Attack – so its place in the hall of console fame is assured.

Helios

Richard Swettenham built the first Helios console at Olympic studios in 1960's London. It proved a popular desk, providing the centrepiece for some seminal recordings and artists such as Jimi Hendrix. Chris Blackwell of Island Records decided to build a studio around the same desk, and so he put up the finance for Swettenham to go into business – and so the company Helios was born. The desk's iconic wraparound format became a common sight in many of the UK's top recording studios, but most of the remaining ones are no longer in the land of Blighty. The EQ of the desk was particularly sought after and the '69 version, which graced Island's Basing Street studio, is considered the most musical sounding. Strangely enough, Tony Arnold of Helios Electronics' (www.helios-electronics.com) favorite Helios is the one at Heleocentric studios in East Sussex – and it's an all-new discrete component-based recreation of the '69 console using an original chassis.

While tracking down classics is a fun game for the affluent few, those with more modest budgets need not despair. "A few years ago, Neve came out with a small 16-channel desk which is based on the classic lines," says Thompson. "They've gone back to building a desk that replicates the ones they were making in the early 70s – that's because demand for these consoles has gone through the roof." These recreations and replications, along with the availability of excellent modelled plug-ins of classic designs such as Universal Audio's Neve 1081 and Trident A range EQs, mean that more engineers than ever can get, at least, a taste of the classic sound. Though these emulations may fall short of the true experience of running audio through a steaming vintage Neve, they do at least offer upcoming engineers the chance to experience some of the audio excellence of these designs and make them hungry to experience the real thing. The classic console is dead! Long live the classic console!. AM

video guide

A Sound Pro's Guide To Video

Post Production Part 8

KEVIN HILTON follows the evolution of non-linear video editing into the 21st century in this last look at the techniques of editing.

With the turn of the 20th century non-linear video editing (NLVE) was fully established, both as a technology and an accepted tool for film, television, and corporate post-production. As the 21st century went on NLVE systems were expanded beyond merely the basic function of cutting and assembling footage. Other elements of post work – compositing, visual effects, colour correction, audio mixing – have been integrated into the core editing workstation to further compress the process of producing a finished programme.

This has been made possible by the fundamental nature of non-linearity, which brings flexibility not only to the business of editing but also allowed it to be carried out in relation to other post-production tasks. The key to non-linear editing is having individual pieces of footage from different sources available at the same time. These remain separate, consecutive entities, and can be called up and worked on at any time in any order.

Editor and author Michael Rubin calls this 'horizontal separation', with horizontal non-linearity designating how each piece of footage sits in relation to others, creating individual events in time. From this arrangement of material an editor is able to assemble a coherent edit. The horizontal separation is lost when the edit is mastered and the sequences become a completed sequence.

An edited sequence or production consists of a succession of single images, the frames that ultimately create moving pictures. Regardless of what goes to make up the images in a frame, the single shot is a relatively simple entity that exists unto itself. But in a cinema/television sense, without other elements it does not make a great deal of sense.

In Association With...

Associated with the picture frame are several layers of information, including multiple tracks of audio, graphics, visual effects (which again may consist of several elements), and titles. Rubin defines these as existing in vertical separation in relation to the image and each other, creating a form of vertical non-linearity. This does not depend on time as with horizontal non-linearity, but is spatial in nature.

The combination of horizontal and vertical non-linearity has helped create the production chain, or workflow, that is now used by the majority of post-production houses. On a smaller, more integrated scale it forms the basis of all-in-one editing and finishing workstations produced by the leading NLVE manufacturers. Both types of system have brought together the various functions of post, with editing at the centre.

Digital intermediate (DI) was discussed in the very first Video Guide of this series, and in the three and a half years since then it has become the primary way to organise the post-production process. It is not used by all facilities, a decision that depends on the type of projects undertaken and the size of the post house, but with footage now being either digitised or coming in as data files, DI has been adopted by most companies to manage the movement of footage and who is able to work on it.

> "DI allows several people to work on different aspects of a project simultaneously. The converse of this concept... is the stand-alone workstation running software that offers tools for all aspects of post-production."

Material is held on a central media server and the editor, colourist, and VFX artists are able to load what they need on to their respective workstations. Despite this, DI is not as all-encompassing a technology as might be thought because the offline, or craft, edit is not always performed at a facility. Sometimes it will begin on location, or at a film studios, with the editor working on a portable system before moving to a suite at the post house.

In Chains

Quantel was among the first manufacturers to produce a NLVE system, and in recent years has combined its technologies into overall DI production chains. In 1985 Quantel's Harry video effects compositing workstation offered editing capability with 80-seconds of storage on an integral hard disk. In 1993 the company introduced Dylan, a disk array designed to support Henry, an effects editor, Hal, a video design system, and the Editbox non-linear editor.

Quantel's move into DI came in 2000 with the introduction of iQ. This editing and compositing system is based on what Quantel calls Resolution Co-existence, meaning it is able to run all TV and film formats at the same time, including SD, HD, and digital film.

DI allows several people to work on different aspects of a project simultaneously. The converse of this concept, but still exploiting the horizontal-vertical natures of non-linearity, is the stand-alone workstation running software ▸

Quantel moved into DI with the introduction of its iQ system.

GLOSSARY

Digital intermediate makes it possible to connect editing workstations to a central media server and be part of a wider production chain. In most facilities the editor's computer will have its own local storage on to which material is loaded from the main data store. While this is the safest and most efficient way to work there is a trend for cutting footage that is held on a server. This, not surprisingly, is known as in-server editing and has found a niche in newsrooms and post-production facilities working on a fast turnaround. The computer and server are connected over Gigabit Ethernet and new material can be loaded in the background while the edit continues.

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Post Production: Part 8

news

Deliveries began during December 2009 of Autodesk's Discreet Smoke 2010 for Mac OS X. This combined editing/composting/titling/effects software is the first Autodesk finishing product specifically for the Mac, and has been designed to work with Apple's 64-bit Snow Leopard operating system.

Smoke 2010 was previewed at InterBEE 2009 in Japan and features editing, conform, 2D and 3D titling, colour correction, image stabilisation, tracking and keying, 2D and 3D compositing, paint, rotoscoping, and retouching capabilities. It is able to natively deal with data file formats including QuickTime, Panasonic P2 HD, and Sony XDCAM. Smoke 2010 can also be used as part of Final Cut Studio and Media Composer production chains.

"The business of post-production is evolving," commented Stig Gruman, Vice President of digital entertainment at Autodesk. "Post-production and broadcast facilities alike are seeking more affordable, integrated creative tools that can help them stand out from the crowd. Smoke 2010 on the Mac has been designed to help editors increase creative output, project quality, and turnaround times. It brings production-proven finishing capabilities to the extremely talented community of artists already using the Mac in broadcast and post-production."

Final Cut Pro Studio: Apple's complete graphics editing suite.

that offers tools for all aspects of post-production. Avid was the first manufacturer to produce such a system.

Avid Xpress Pro Studio was launched at NAB 2004 aimed squarely at DV users. This software package combined video editing, audio production, 3D animation, compositing/titling, and DVD authoring to create a single, all encompassing suite of production tools that would interoperate with each other on the same computer.

The reaction within the industry was of mild surprise at the thought that no one had considered doing this before. This was almost certainly the reaction at Apple, which had released several feature suites around FCP, notably for DVD creation, but found itself lagging behind in terms of all-in-one desktop systems.

This imbalance in the NLVE market did not last long; at the following year's NAB Convention Apple unveiled Final Cut Pro Studio, a product name that was initially regarded as both unwise and lazy but in the long-term it has not proved to be a problem. Avid later repositioned its offering, replacing Xpress Pro Studio with the Avid Production Suite for Media Composer.

The latest version of Apple Final Cut Pro Studio includes: FCP 7 for video editing (described in December 2009's Video Guide); Motion 4 for creation of graphics, 3D animation, filtering and effects, titling and compositing; the Soundtrack 3 audio editing and mixing package; Color 1.5, which gives full grading capability and can receive projects from FCP 7 without the need for converting speed effects or any other involved transfer process; Compressor 3.5 encoding, compression and conversion software allowing projects to be prepared for delivery in a wide variety of formats, from broadcast to iPhone, IPTV, the Internet and Blu-ray or DVD; and DVD Studio 4 for straightforward authoring, allowing discs to be either burned on the Mac running the program or replicated elsewhere.

As the pioneer in desktop editing, Adobe was compelled to follow the trend for multi-function post-production systems. Adobe Premiere Pro CS4 4.2 incorporates editing capability with After Effects for VFX work, Photoshop, and the Encore DVD burning package. Recognising the ubiquity of FCP Adobe offers the option to import projects from the rival editing system into Premiere Pro CS4 for finishing using After Effects.

Under The Influence

FCP and Premiere have influenced the numerous desktop NLVE systems since the late 1990s. They have also had an impact on Avid's direction in recent years, as the pioneering non-linear editing company came to terms with competition in a rapidly changing market.

The most significant shift in Avid's product policy was its own take on desktop editing. Avid Xpress Pro, which formed the basis of the later Studio product, was developed as software to run on Macs and PCs, offering the basic elements of its higher end systems. This proved popular with producers and journalists who wanted to cut together material on the move (usually the train) or on location using their laptops. Xpress Pro gave Avid a slice of lower end market, but in 2008 it was folded into the overall Media Composer range.

Despite its pivotal role in the development of NLVE and rapid expansion during the 1990s, Avid has had a torrid corporate time over the last ten to 15 years. The management has changed and company restructured several times in attempts to maintain Avid's position in the market. While the company has suffered particularly from the growth in popularity and sophistication of desktop systems in general, and the onslaught of FCP in particular, it has also been squeezed at the top end.

Two serious contenders have been Media 100 and Lightworks, each taking a different approach to challenge the dominance of Avid. Media 100 first appeared in 1993 and was developed by Data Translation, but over the years the product name has become that of the company. The aim was to take on Avid at its own game, producing a fully functioned NLVE for the Mac – only cheaper.

The strategy worked and the current product is Media 100 Suite v1.1, running on Mac OS X with support for Blackmagic Design video I/O cards for HD as well as SD operation. By contrast Lightworks was designed as a direct replacement for flatbed film editing tables. Its dedicated hardware offers a controller that is designed to recreate the tactile control and sensitivity of the Steenbeck. After an eventful corporate life through the 1990s and into the 2000s, Lightworks is now owned by shared storage developer Editshare.

Another contender in the NLVE ring was Pinnacle Systems, which developed editing and graphics products for both the professional and domestic markets. Both businesses were bought by Avid in 2005, allowing it to form a new consumer division while also integrating the pro systems into its existing portfolio. Pinnacle Studio is now the manufacturer's main all-in-one system, with editing, titling, animation, and effects capability.

Discreet Logic is a company that has concentrated on visual effects but crossed over into editing in 1996 with FIRE, a 4:4:4 device designed to run with the manufacturer's Flint, Flame, and Inferno graphics workstations. A year later Discreet bought the ailing but fancied D/Vision system, which made inroads into the market during the early '90s.

FIRE has been discontinued, while Discreet Logic as a company was bought in 1999 by Autodesk, developer of the 3D Studio Max graphics system and AutoCAD software. Discreet is now a brand within Autodesk, which has continued to market the full range of graphics and compositing systems for film and TV work. The Smoke 2010 package marked a departure in being the first Autodesk finishing product produced for Mac operation (see news story).

The Graphic Challenger

Avid has challenged Discreet/Autodesk in the graphics field but in many respects remains an editing manufacturer. The flagship NLVE system is still the Media Composer, now in its Nitris DX version. This is able to handle any format and accepts material in any form, including file-based data from digital cinema cameras.

Editing systems have evolved over the years, from the physical cutting of film with scissors, through video tape to optical disc, and now non-linear working using computer hard disk technology. The fundamentals remain, however, and editing is ultimately judged by the results on screen, especially if it is not obtrusive, with the way of achieving the end result merely a mechanical means to an end.

Video Guide moves on from editing in the next edition to look at another artistic/technical component of post-production, colour grading and correction.

Score One for the Renaissance Man

John Broomhall talks to Audio Director, Mathieu Jeanson, and Composer, Jesper Kyd, about their work on the sound and music of Ubisoft's landmark videogame title.

Assassin's Creed 2 presents another clear signpost to the rapid evolution of audio in games. Placing the player at the heart of an epic story of family, vengeance, and conspiracy set in the Renaissance era, it delivers cutting-edge entertainment and compelling gameplay as the life of player character Ezio Auditore da Firenze, a young Italian nobleman gradually unfolds. A rich soundscape and evocative original score add considerably to the quality and impact of the overall experience.

Mathieu Jeanson headed up audio production for this sequel, which took around eighteen months to complete. He explains how the party got started: "Based on the first Assassin's Creed audio production experience using an in-house sound pipeline, we decided to make a major upgrade of the audio technology to offer more competitive audio. We choose the Wwise audio pipeline middleware from the Montréal developer, Audiokinetic. The game was shipped using Wwise 2009.1 patch 3 version with some special Ogg Vorbis optimisation.

Assassin's Creed II Composer Jesper Kyd.

A New Vision

"My vision was to start from what we already established on the first game and improve it as much as we could by designing new systems and mechanics that would support the audio capability of the new sound pipeline. The setting of the game is different from the first game but lots of audio content could be re-used (mostly navigation, some systemic fight assets, and signature sound) because they have been designed and created specifically for this franchise. Jesper Kyd, with his unique touch, composed a soundtrack that would support the beauty of the era."

> "Free roaming and combat are two of the most important aspects of the game, so lots of attention was given to these . . . All Foley you hear in the game was recorded specifically for it."

A particular focus for Jeanson's team was to build upon and improve the casting and voice performance recording of the title's first outing. Faced with a tight schedule for animation and motion capture, dialogue was recorded at four separate sites including Ubisoft's in-house facilities, at the motion capture sessions and also at SoundDelux. Jeanson: "Inevitably that added some problems at the end. Because dialogue was recorded in different locations, we had to spend a lot of time to match the rooms, frequency response, and dynamic. One-and-a-half months were spent to post all English dialogue properly."

Freedom To Roam

As well as some satisfying combat sequences, one of the delights of *Assassin's Creed 2* is freely exploring the cities ▸

having your extremely fleet-of-foot character deftly scale buildings and run effortlessly across the skyline, leaping smoothly around the rooftops thereby providing some breathtaking moments supported by superb animation. Jeanson: "Free roaming and combat are two of the most important aspects of the game, so lots of attention was given to these – the player will spend a lot of time doing them. All Foley you hear in the game was recorded specifically for it. Some was re-used from AC1 but many weeks were spent to record new weapon sounds. Jeanson: "Mostly, the audio of the game was recorded, edited, and mixed on Pro Tools systems (HD &/or LE). All scripted event Foley was outsourced for ten days' production, recorded onto a Fairlight, and then transferred to Pro Tools via OMF for mixing."

Meanwhile, a smart coding trick was deployed to avoid having to play every individual footstep of each character of every crowd within range of the player character, as Jeanson calls it – 'sound pollution'. The team designed a bespoke system called Falla (mix of Foley and walla) which ray-traces around the main character to discover other groups of characters present in the world and to verify their type (general 'non-player character' or guard), crowd density (small, medium, large), and state (walk or run). Jeanson: "Then, based on these variables, we mute their individual footsteps and play instead a short loop of people walking or running, emitted from these groups. We managed to have many discrete 'falla' playing simultaneously and get rid of lots of unwanted footsteps." When someone emerges from the group, the footsteps integrated in their animation are unmuted and things play as normal on a per character basis.

> "...you start from scratch and build ideas around the core idea, which in this case is that it takes place in the 15th century. The music has to be interesting, fit the time setting but also be entertaining."

Scoring Highly

Underpinning and gluing together the entire aural offering is Jesper Kyd's impressive original score which, running at some three-and-a-half hours of music in total, was clearly a massive undertaking. Kyd: "It's vital to start discussions early on the project. I track the development progress closely and start writing pretty early as well. Being involved at that stage makes for a more accurate soundtrack – you can capture a lot of things that you might not have thought about if you had to do it all in three weeks at the end – you can really get into the mood and what the team is trying to express. The game is unique and requires a unique soundtrack so you have to really step all the way back and consider what are the ground elements you want – you start from scratch and build ideas around the core idea, which in this case is that it takes place in the 15th century. The music has to be interesting, fit the time setting but also be entertaining."

Kyd clearly does his research but most of all is concerned with creating the right vibe. Certainly not historically hogtied, he mixes in many modern elements. "The music has to have a dark foreboding feel for when you undertake missions, but there's also plenty of score for exploring the cities with lots of strings and woodwinds, individual vocal performances, acoustic and electric guitars, live percussion and choir. There are live elements to every piece of music in the game."

With two hours' worth of orchestra and choir performances recorded at Hollywood's Capitol Studios, the entire music production took Kyd around nine months. Much of the work was done at his own facility where he runs eight computers, and among the other usual studio toys, owns no less than 22 hardware synthesisers, including a 1970's collection encompassing a Yamaha CS-80 and a Roland System 100. Kyd: "I use analogue to

Ezio gets himself into a scuffle with the locals.

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*We do not hire toy dinosaurs

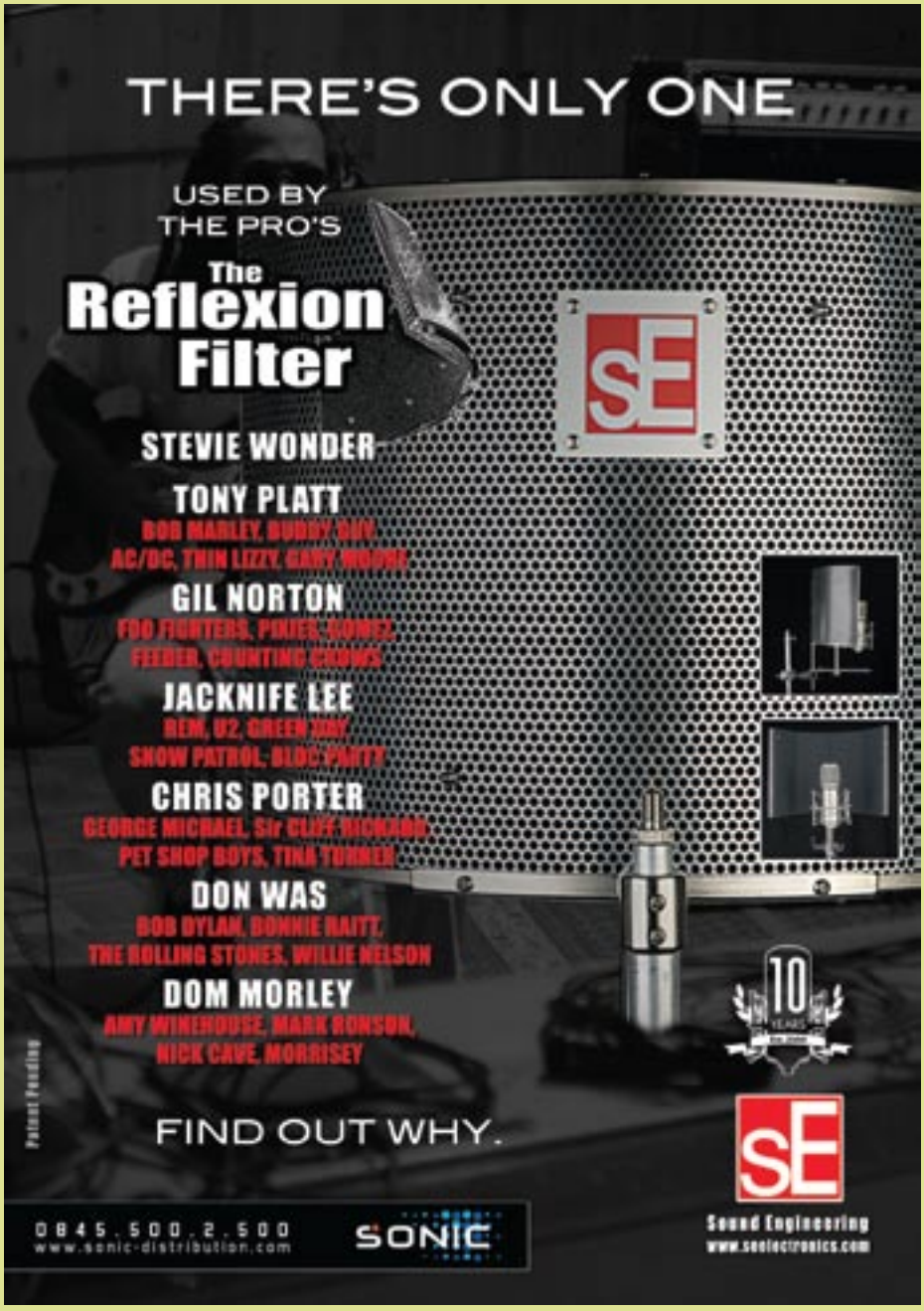
Breathtaking free-running (and diving) is a highlight of Assassin's Creed II.

get an organic sound – I think it's vastly superior to anything that goes on inside a computer so I use it to make a non-electronic sound, you could say! None of these synths are MIDI-equipped so I play it all in live and record directly to audio. Using plug-ins can very quickly become extremely precise and electronic sounding. I needed something that would blend nicely with a live orchestra."

Kyd is also wary of so-called interactive music systems making for clinical music output: "I think a lot of times when music in games is too 'systematic' or too layered it's because of a technology-driven decision, maybe by programmers. So I have to hand it to Ubisoft – whilst they are really a hardcore tech-savvy team (and visually the game looks amazing), at the same time they're willing to step back and say we don't actually have to take that kind of complicated approach to music delivery. Instead, because we have fairly long pieces of music, there's time to set the mood and by doing so, I think you're creating an experience that's immersive – if people love the atmosphere and want to go back there even after they've completed the missions and experience again the mood and feelings that they had when listening to the music, then the score is successful."

> "...if people love the atmosphere and want to go back there even after they've completed the missions and experience again the mood and feelings that they had when listening to the music, then the score is successful."

Jesper Kyd at the console during score recording for ACII.



In The Charts

With his initial music experiments being warmly received by the team and fitting well in the game, an atmosphere of trust was soon established leading to even greater creative freedom which Kyd has clearly relished and taken advantage of, judging by the final results. As well as featuring in Videogames Live symphony concerts the music soundtrack has also charted very favourably on iTunes and Amazon, once again demonstrating that high quality videogame music has a life beyond the borders of its original application these days.

Assassin's Creed 2 is available now for Xbox360 and Playstation 3.

Developer/Publisher
Ubisoft Montreal/Ubisoft
Audio Team
Mathieu Jeanson – Audio Director
James Wearing – Lead Audio Designer
Hayden Whiting – Music Designer
Nicholas Grimwood – Voice Designer
Richard Calamatas – Voice Designer
Ann-Elise Stidham – Audio Design
Aldo Sampaio – Audio Designer
Jesper Kyd – Composer

Angela Brown on +44 (0)1480 461555 E-mail: a.brown@audiomedia.com

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COMPETITION FILE: Xmas/W1nner5

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First Prize Winner:
Antonakis Christoforides, Nicosia, Cyprus

Runners-Up:
John Foster, Rustington
Graeme Taylor, Glasgow

The lucky first prize winner will be receiving loads of great items, including the really very fabulous iPod Touch contributed by Prism Sound. The runners-up will get a not-too-shabby sack of fun too. The rest of you will just have to enter again next year…

Big thanks to all manufacturers who contributed to this year's SWAG stash:

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